ATLAS RESIN PROPPANTS

September 10, 2012

Michael Ross, P.E.
West Central Region Air Program, LaCrosse Area Office
Wisconsin Department of Natural Resources
3550 Mormon Coulee Road, Room 104
LaCrosse, WI 54601

via e-mail to Michael.Ross@wisconsin.gov

Subject: Atlas Resin Proppants, LLC (FID #627005280)
Response to Incompleteness Determination for an Expedited Construction Permit & Waiver Request
WDNR Permit No. 12-MHR-176

Dear Mr. Ross:

The purpose of this letter is to respond to your September 5, 2012, notice of incompleteness regarding Atlas Resin Proppants, LLC's (Atlas) construction permit application and waiver request to replace two wet scrubber control devices at its facility located in Taylor, Wisconsin (FID 627005280) with recuperative thermal oxidizers. The application and waiver request were received by the Wisconsin Department of Natural Resources (WDNR) on August 17, 2012.

Although the notice indicates that the application was "deemed incomplete", there is no specification as to what information is needed to provide a complete application. Rather, it appears that the letter serves to notify Atlas in accordance with s. NR 406.03(2)(c), Wis. Adm. Code that the WDNR has determined that the application is not eligible for the requested construction permit waiver. This determination is based on the WDNR's opinion that Badger Mining Corporation (FID #627007260) is a support facility to Atlas (FID #627005280), and as such the two facilities constitute a single stationary source. Further, that because the combined potential nitrogen oxide (NO_x) emissions of 298 tons per year (TPY) exceed the Prevention of Significant Deterioration (PSD) *major stationary source* threshold, a federally enforceable limit will be required to avoid PSD requirements under ch. NR 405. Consequently, the WDNR has asserted that the waiver request does not satisfy the eligibility criteria under s. NR 406.03(2)(f), Wis. Adm. Code.

Due to the time-critical nature of the planned scrubber replacement project, in the interest expediting the continued processing of the waiver request and the construction permit application, our response in this letter is limited to addressing the basis for the WDNR's assertion that the waiver request does not satisfy the eligibility criteria under s. NR 406.03(2)(f). A separate letter will be forthcoming that will respond to the WDNR's opinion that Badger Mining Corporation (Badger) is a support facility to Atlas' Taylor facility.

The waiver criteria under s. NR 406.03(2)(f) stipulates that the WDNR may not grant a waiver for a source that requires a permit under ch. NR 405 or 408, or requires a permit to establish enforceable limitations on potential to emit to avoid permit requirements of ch. NR 405 or 408. To require a permit under ch. 405 or 408, one must either be (1) modifying an existing *major stationary source*, or (2) proposing a physical change at a stationary source that constitutes a *major stationary source* itself.

As summarized in the following table, the current potential emissions from the existing Atlas and Badger operations are below the respective PSD major source threshold of 250 TPY; therefore, the emissions do not constitute an existing *major stationary source*, when considered individually or combined. Moreover, the potential 212 TPY of NO_x from the planned oxidizer installation at Atlas is less than 250 TPY and, as such, this change does not constitute a major stationary source itself.

Pollutant	Current PTE[1], TPY		
	Atlas	Badger	Total
PM-10 (direct)	11	87.6	98.60
Sulfur Dioxide	0.027	0.35	0.38
Nitrogen Oxides	4.42	85.8	90.22
Volatile Organic Compounds	53.4	3.26	56.66
Carbon Monoxide	3.71	49.7	53.41

Notes

1. *Emissions are per the following WDNR Preliminary Determinations:*
   Atlas Resin Proppants - 627005280-P10 (renewal) dated 09-08-2011
   Badger Mining Corp. - 627007260-F20 / 10-JJW-179, dated 11-01-2011

Based on this information, Atlas respectfully maintains that the waiver criteria under s. NR 406.03(2)(f) is satisfied, as originally stated in our August 16, 2012, letter.

Your time and consideration of this matter are much appreciated. As noted in the waiver request, it is critical for the planned construction to commence by October 1, 2012. Should you have any questions or if there is anything that we can do to facilitate the WDNR's review of this request, please call our environmental consultant, Mr. Joe Liello (TRC Environmental Corp.) at 262-901-2135, or me at 715-662-2200, ext. 231.

Sincerely,

Atlas Resin Proppants, LLC

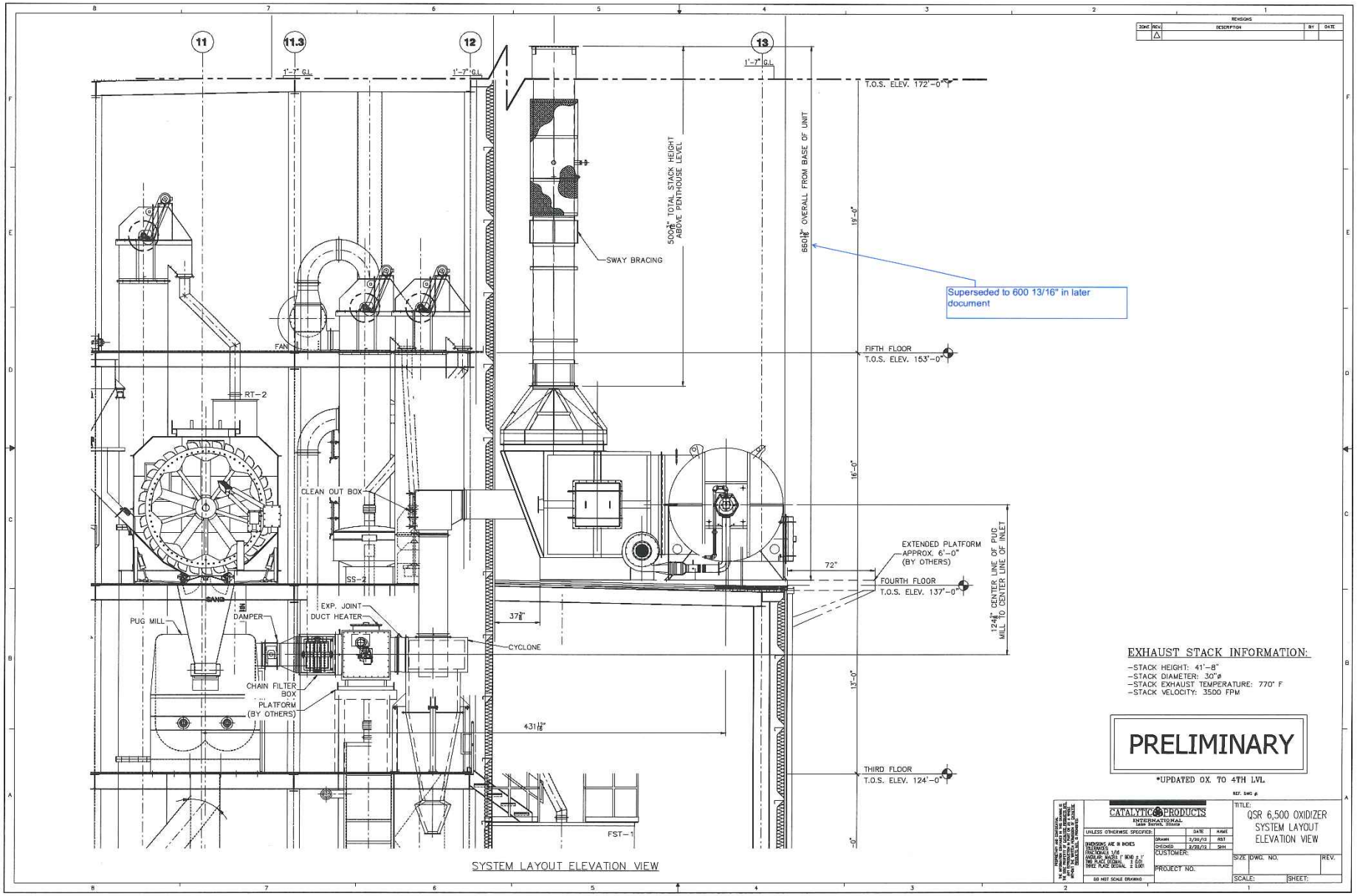
Erica R Grant

Erica R. Grant
Operations Manager

cc: Jeffrey Johnson, WDNR (via e-mail: jeffrey.johnson@wisconsin.gov)
Marty Sellers, WDNR (via email: marty.sellers@wisconsin.gov)
Joe C. Liello, TRC Environmental Corporation

Attachment 1
USGS topographic map

Attachment 2
Site development plan



SYSTEM LAYOUT ELEVATION VIEW

REVISIONS

ZONE	REV.	DESCRIPTION	BY	DATE
	△			

EXHAUST STACK INFORMATION:

- STACK HEIGHT: 41'-8"
- STACK DIAMETER: 30"ø
- STACK EXHAUST TEMPERATURE: 770° F
- STACK VELOCITY: 3500 FPM

PRELIMINARY

*UPDATED OX. TO 4TH LVL

REF. DWG #

CATALYTIC PRODUCTS INTERNATIONAL Lake Forest, Illinois

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES
FRACTIONALS 1/16
ANGULAR: MACH ± BEND ± 1°
TWO PLACE DECIMAL ± 0.01
THREE PLACE DECIMAL ± 0.005

	DATE	NAME
DRAWN	2/20/12	RST
CHECKED	2/28/12	SKH
CUSTOMER:		
PROJECT NO.		

DO NOT SCALE DRAWING

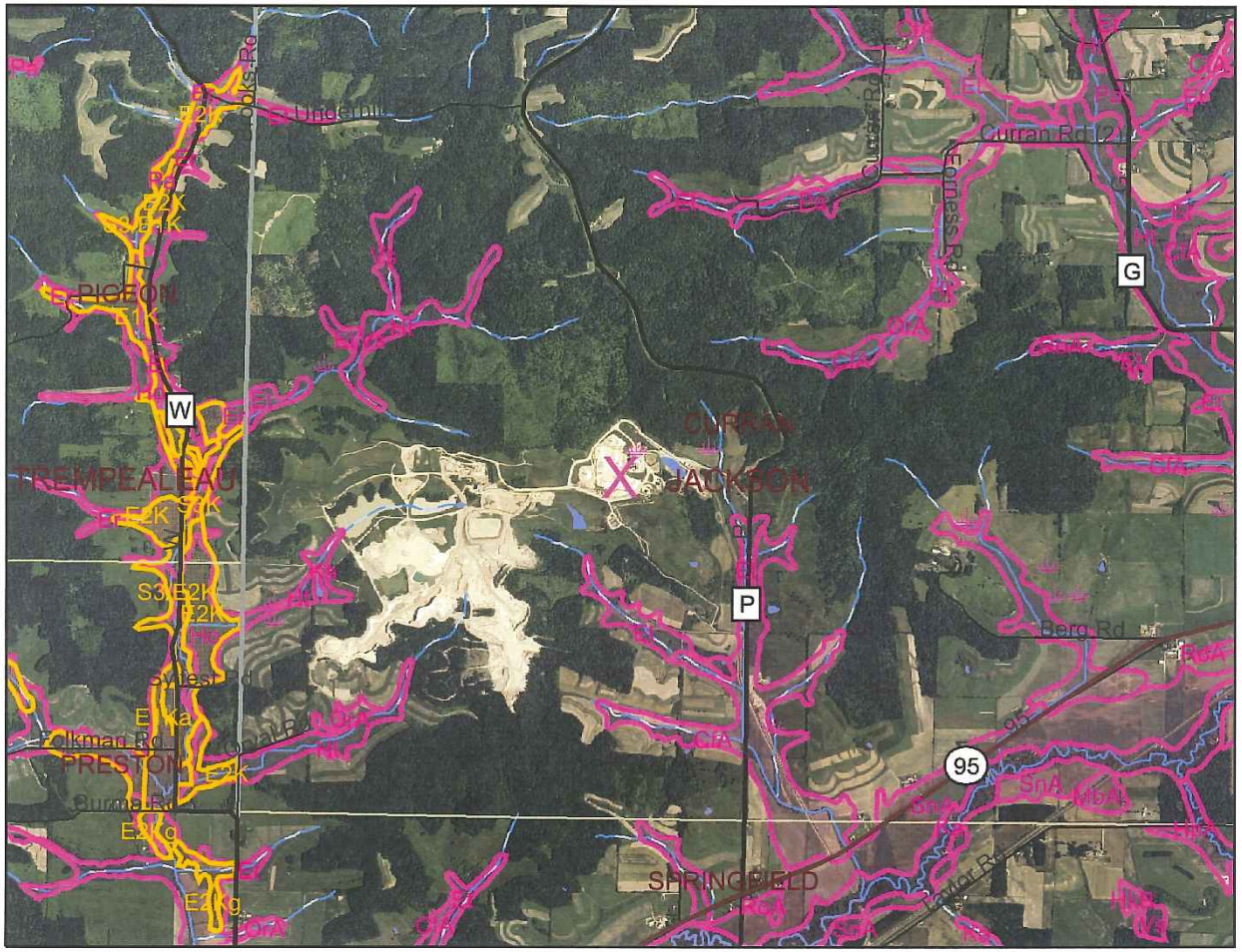
TITLE: QSR 6,500 OXIDIZER SYSTEM LAYOUT ELEVATION VIEW

SIZE | DWG. NO. | REV.

SCALE: | SHEET:

Attachment 3
Wisconsin Wetlands Inventory map

Map Created on Aug 01, 2012



Legend

Major Highways
- Interstate
- State Highway
- U.S. Highways
- County Roads
- Local Roads
- 24K County Boundaries

Civil Towns
- Civil Town
- USDA Wetspots

DNR Wetland Points
- Excavated Pond
- Dammed Pond
- Wetland Too Small to Delineate
- Filled Excavated Pond
- Filled Dammed Pond
- Filled Wetland Too Small to Delineate
- Filled or Drained Wetland

DNR Wetland Areas
- Upland
- Wetland
- Filled or Drained Wetland
- Wetland Indicator Soils
- 24K Open Water

24K Rivers and Shorelines
- Intermittent Fluctuating
- Perennial

Cities and Villages
- Village
- City

N

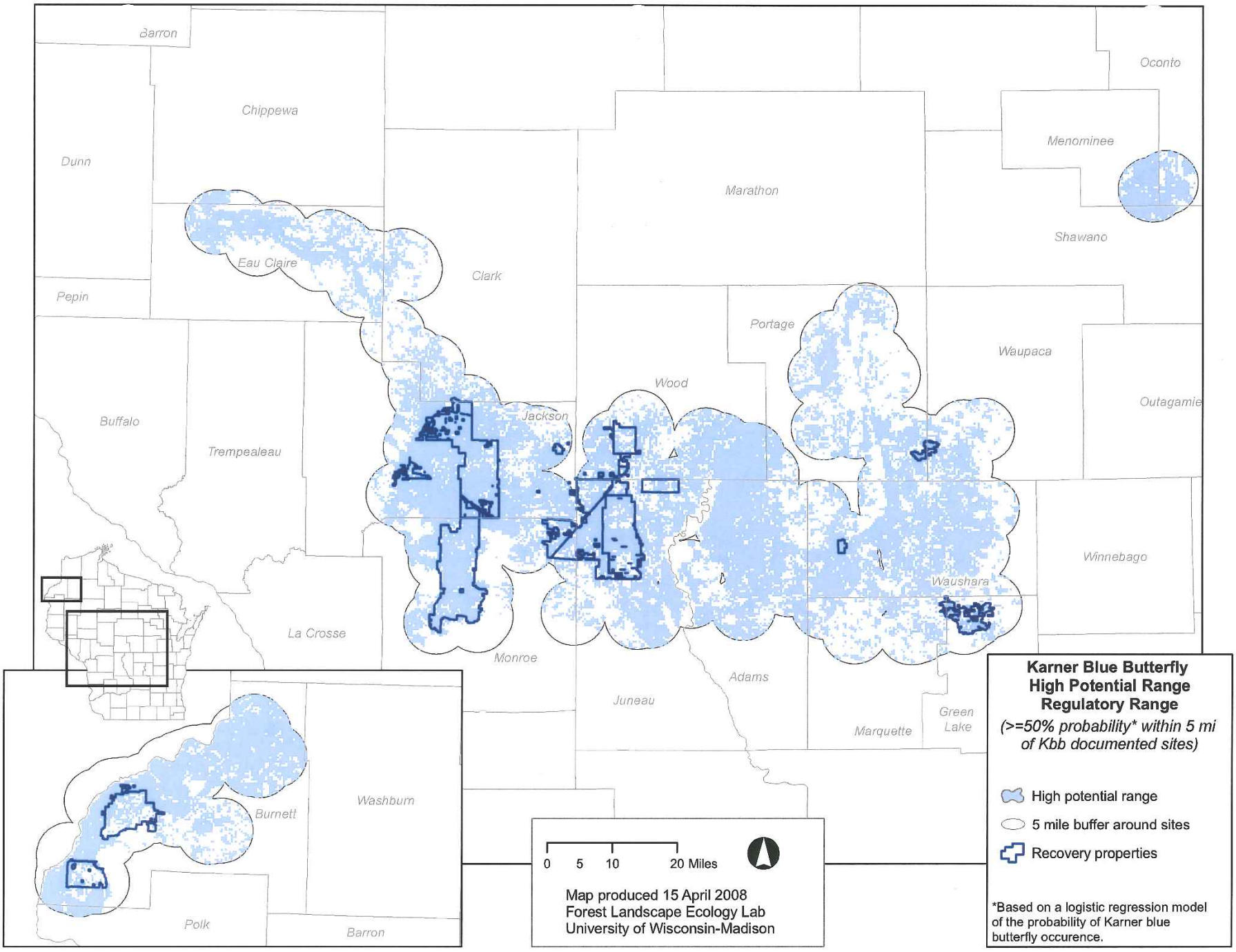
Scale: 1:42,514

0 4000 8000 12000 ft.

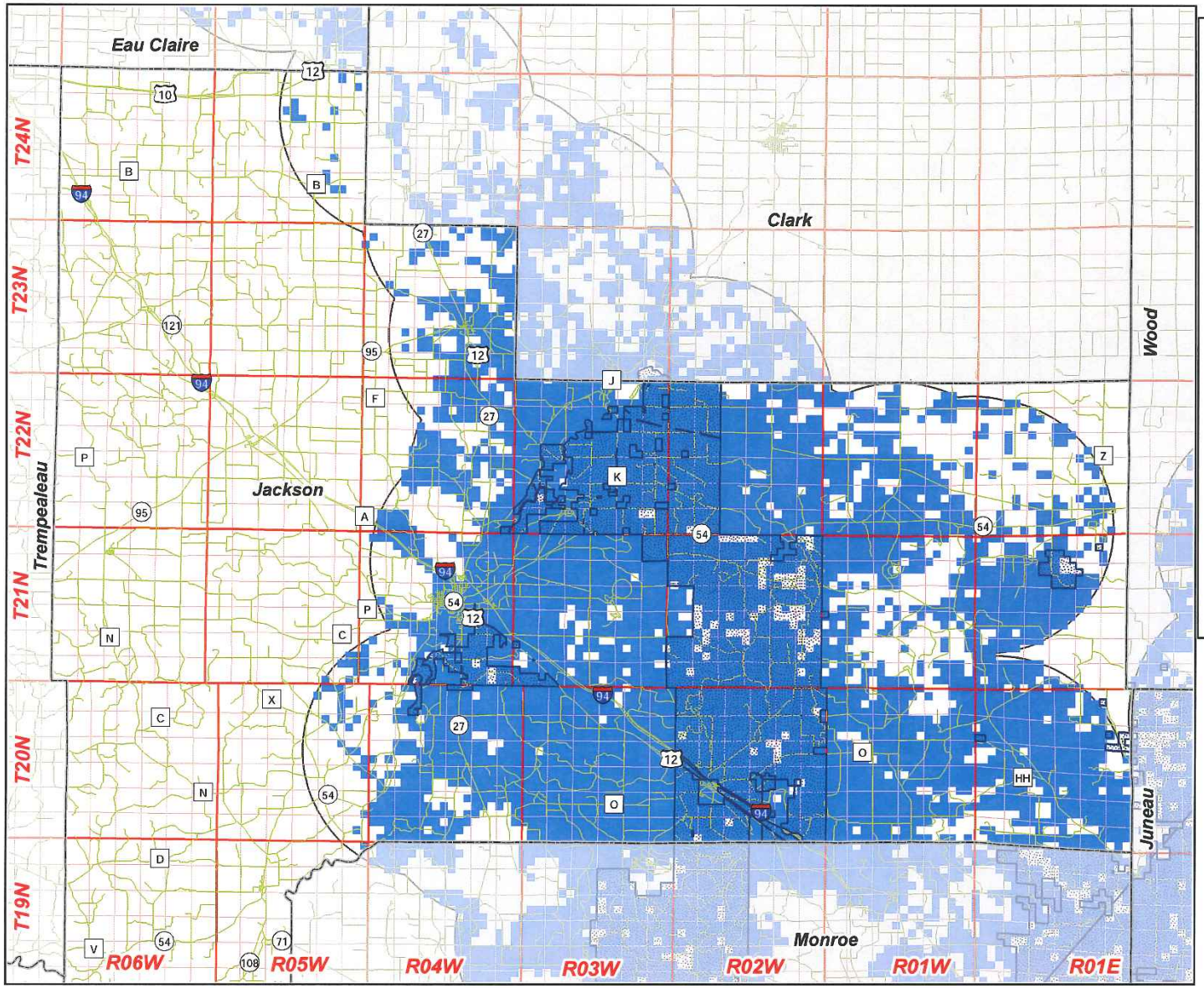
Map created on Aug 1, 2012

Wisconsin Wetland Inventory (WWI) maps show graphic representations of the type, size and location of wetlands in Wisconsin. These maps have been prepared from the analysis of high altitude imagery in conjunction with soil surveys, topographic maps, previous wetland inventories and field work. State statutes define a wetland as "an area where water is at, near or above the land surface long enough to be capable of supporting aquatic or hydrophytic vegetation and which has soils indicative of wet conditions." The principal focus of the WWI is to produce wetland maps that are graphic representations of the type, size and location of wetlands in Wisconsin. Within this context, the objective of the WWI is to produce reconnaissance level information on the location, type, size of these habitats such that they are accurate at the nominal scale of the 1:24,000 (1 inch = 2000 feet) base map. The DNR recognizes the limitations of using remotely sensed information as the primary data source. They are to be used as a guide for planning purposes. There is no attempt, in either the design or products of this inventory, to define the limits of jurisdiction of any Federal, State, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, State, or local agencies concerning specified agency regulatory programs and jurisdictions that may affect such activities. The most accurate method of determining the legal extent of a wetland for federal or state regulations is a field delineation of the wetland boundary by a professional trained in wetland delineation techniques.

Attachment 4
DNR Karner Blue Butterfly Habitat maps



ARP-Taylor00745



Wisconsin Karner Blue Butterfly
Habitat Conservation Plan

JACKSON COUNTY

Karner High Potential Range
(50% Probability within 5 mi of documented site)

- High potential range
- 5 mile buffer around sites
- Recovery properties
- Township
- Section
- Roads

0 5 Miles

Map produced February 2009
at the Forest Landscape Ecology Lab,
Department of Forest and Wildlife Ecology
University of Wisconsin-Madison

ARP-Taylor00746

Appendix E
Proposed Permit Conditions

E.1 AFFECTED PERMIT PAGES – VERSION 1 WITH RED-LINE TRACKED CHANGES
E.2 AFFECTED PERMIT PAGES – VERSION 2 WITH CHANGES INCORPORATED FOR CLARITY
E.3 COMPLIANCE ASSURANCE MONITORING PLANS - OXIDIZERS

E.1 AFFECTED PERMIT PAGES – VERSION 1 WITH RED-LINE TRACKED CHANGES

E. Stack S50, Control Device C50 - Processes: P51 - Batch Mixer, P52 - Continuous Mixer, and P53 - Sludge Tank #1 [Constructed 2005]

Pollutant	a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
1. Particulate Matter Emissions	**(1)** Emissions may not exceed ~~1.5~~0.71 pounds per hour. [6] [ss. NR 404.08(2) and NR 415.05(1)(m) or 415.05(2), Wis. Adm. Code, and 05-JAJ-015] **(2)** Stack Parameters: These requirements are included because the source was reviewed with these stack parameters and it was determined that no increments or ambient air quality standards will be violated when constructed as proposed. (a) Stack height shall be at least ~~75~~ 92 feet above ground level. (b) The stack outlet diameter may not be greater than 2.47 feet (inside diameter). (c) The stack may not be equipped with a rainhat or other device which impedes the upward flow of the exhaust gases. [s. 285.65(3), Stats. and s. NR 406.10, Wis. Adm. Code, and 05-JAJ-015]	**(1)** The ~~wet scrubber control device~~recuperative thermal oxidizer~~, including demister,~~ shall be in line and shall be operated at all times when the processes are in operation. [s. NR 406.10 and s. NR 407.09(4)(a)1., Wis. Adm. Code, and 05-JAJ-015] **(2)** Instrumentation to monitor the ~~pressure drop across the wet scrubber and demister~~combustion chamber temperature, in ~~inches of water column~~degrees Fahrenheit or Celsius (centigrade), shall be operated properly. [s. NR 439.055(1)(~~e~~d), Wis. Adm. Code, and 05-JAJ-015] ~~**(3)** To verify wet scrubber liquor flow, the permittee shall do one of the following:~~ ~~(a) Operate instrumentation to monitor the wet scrubber liquor flow, in gallons per minute [s. NR 439.055(1)(e), Wis. Adm. Code, and 05-JAJ-015];~~ ~~or~~ ~~(b) Conduct visual inspections of the scrubber liquor pump flow to confirm return flow of scrubber liquor to sludge tank and monitor and record the motor power of the scrubber liquor recirculation pump. [s. 285.65(4), Wis. Stats., and s. NR 407.09(4), Wis. Adm. Code]~~ ~~**(4)** Instrumentation and laboratory techniques[7] to monitor the pH of the wet scrubber absorbing fluid shall be utilized properly. [s. NR 439.055(1)(f), Wis. Adm. Code, and 05-JAJ-015]~~	**(1)** Reference Test Method for Particulate Matter Emissions: Whenever particulate matter emission testing is required, the permittee shall use U.S. EPA Method 5, 5A, 5B, 5D, 5E, 5F, 5G, 5H or 17 including condensible backhalf emissions (U.S. EPA Method 202). [s. NR 439.06(1), Wis. Adm. Code] **(2)** The permittee shall keep and maintain on site technical drawings, blueprints or equivalent records of the physical stack parameters. [s. NR 439.04(1)(d), Wis. Adm. Code, and 05-JAJ-015] **(3)** The permittee shall ~~measure~~ monitor and record the temperature of the combustion chamber every 15 minutes~~following operational variables once for every 8 hours of operation or once per day, whichever yields the greater number of measurements:~~ ~~(a) Pressure drop across the wet scrubber and demister, in inches of water column;~~ ~~(b) pH of the absorption scrubbing fluid; and~~ ~~(c) Either:~~ ~~(i) Flow of liquor, in gallons per minute; OR~~ ~~(ii) Motor power of the scrubber liquor recirculation pump, and the results of the visual inspections required by I.E.1.b.(3)(b), including the date, time, and name or initials~~

[6] The ~~1.5~~0.71 pounds per hour emission limit is based on modeling and is included in the permit to protect the National Ambient Air Quality Standards (NAAQS). This emission limit is more restrictive than the allowable emission limit of 5.18 pounds per hour calculated from the from 0.2 pounds per 1,000 pounds of exhaust gas limit in s. NR 415.05(1)(m), Wis. Adm. Code. The emission rate determined using the process weight equation is less restrictive than the emission limit calculated from 0.2 pounds per 1,000 pounds of exhaust gas limit in s. NR 415.05(1)(m), Wis. Adm. Code.

~~[7] Atlas takes samples from the sludge tank manually and are measured in the laboratory.~~

E. Stack S50, Control Device C50 - Processes: P51 - Batch Mixer, P52 - Continuous Mixer, and P53 - Sludge Tank #1 [Constructed 2005]

Pollutant	a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
		(~~5~~3) The ~~pressure drop across the wet scrubber and demister~~temperature of the combustion chamber shall be no less than 1,400 degrees Fahrenheit ~~shall be maintained between 8 and 17 inches water column~~, or an alternative ~~range~~ level approved in writing by the Department. [s. NR 407.09(4)(a)1., Wis. Adm. Code, and 05-JAJ-015]	~~of the individual performing the inspection (e.g., initials or name).~~ [s. NR 439.055(2)(~~b~~a), Wis. Adm. Code, and s. 285.65(4), Wis. Stats., and 05-JAJ-015] **(4)** The permittee shall keep records of all inspections, checks and any maintenance or repairs performed on the ~~wet scrubber~~oxidizer system, containing the date of the action, initials of inspector, and the results. [s. NR 439.04(1)(d), Wis. Adm. Code, and 05-JAJ-015] **(5)** The ~~wet scrubber pressure drop, liquor flow, and pH~~oxidizer combustion chamber temperature monitoring device~~s~~ shall be maintained in accordance with the manufacturer's recommendations and shall be calibrated at least once per year. [s. NR 439.11(1)(b) and s. NR 439.055(4), Wis. Adm. Code, and 05-JAJ-015]
2. Visible Emissions	**(1)** Emissions of shade or density may not exceed number 1 of the Ringlemann chart or 20% opacity. [s. NR 431.05, Wis. Adm. Code, and 05-JAJ-015]	**(1)** The requirements in I.E.1.b. and I.E.1.c. shall be used to demonstrate compliance with the visible emissions limit. [s. NR 407.09(4)(a)3.b., Wis. Adm. Code, and 05-JAJ-015]	**(1)** Reference Test Method for Visible Emissions: Whenever visible emission testing is required, the permittee shall use U.S. EPA Method 9. [s. NR 439.06(9)(a)1., Wis. Adm. Code]
3. Volatile Organic Compounds	**(1)** Latest Available Control Techniques and operating practices demonstrating best current technology (LACT). The permittee has demonstrated that 85% control of VOC emissions leaving the ~~wet scrubber~~oxidizer is technologically infeasible for the process line, and so shall use LACT. LACT is defined as the following process operation practices and limitations:	**(1)** The facility shall operate the ~~wet scrubber~~oxidizer at all times the processes are operating. [s. NR 406.10 and s. NR 407.09(4)(a)1., Wis. Adm. Code, and 05-JAJ-015] **(2)** As required under I.E.1.b.(2)-(4). **(3)** The ~~pressure drop across the wet scrubber and demister, the liquor flow rate, and the pH of the scrubbing fluid~~combustion chamber temperature shall be maintained per manufacturer	**(1)** Whenever VOC compliance testing is required, USEPA Method 18, 25 or 25A, or another method approved by the Department in writing shall be used. When approved in writing an equivalent test method may be substituted for the required test method. [s. NR 439.06(3), Wis. Adm. Code, and 05-JAJ-015] **(2)** As required under I.E.1.c.(3)-(5).

E. Stack S50, Control Device C50 - Processes: P51 - Batch Mixer, P52 - Continuous Mixer, and P53 - Sludge Tank #1 [Constructed 2005]

Pollutant	a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
	(a) The facility shall operate the ~~wet scrubber~~oxidizer at all times the processes P51, P52 and P53 are operational, with monitoring of parameters: ~~pressure differential, liquor flow rate, and pH of the scrubbing fluid~~combustion chamber temperature. (b) The ~~wet scrubber~~oxidizer shall achieve one of the following: (i) An overall control efficiency of ~~64~~99% for VOC emissions, or (ii) VOC emission rate no greater than ~~10.60~~.19 pounds per hour. [s. NR 424.03(2)(c), Wis. Adm. Code, and 05-JAJ-015] **(2)** Compliance Assurance Monitoring (CAM) Requirements: Processes exhausting to C50/S50 are a pollutant-specific emissions unit for volatile organic compounds and is subject to the CAM requirements of 40 CFR, part 64. The permittee's Compliance Assurance Monitoring Plan for Scrubber C50 for volatile organic compound control is included as Part III of this permit. [s. 285.65(13), Wis. Stats. 40 CFR 64.2 and 40 CFR 64.3(d)]	specifications, the most recent compliance test, the malfunction prevention and abatement plan required under I.ZZZ.1., or the CAM plan required under Part III to meet the requirements under I.E.3.a.(1) and I.E.1.a.(1). [s. NR 419.03(1), Wis. Adm. Code, and s. 285.65(7), Wis. Stats., and 05-JAJ-015]	~~(3) The permittee shall inspect the circulation pump and packing of the wet scrubber monthly. [s. NR 439.04(1)(d), Wis. Adm. Code, and 05-JAJ-015]~~ **(43)** The permittee shall keep records of all inspections, checks and any maintenance or repairs performed on the ~~wet scrubber~~oxidizer, containing the date of the action, initials of inspector, and the results. [s. NR 439.04(1)(d), Wis. Adm. Code, and 05-JAJ-015]

E. Stack S50, Control Device C50 - Processes: P51 - Batch Mixer, P52 - Continuous Mixer, and P53 - Sludge Tank #1 [Constructed 2005]

Pollutant	a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
4. Phenol Emissions	~~**(1) The processes may not emit more than 1,583 pounds of phenol per month, based on a 12-month rolling average (9.5 tons per year). [s. 285.65(7), Wis. Stats., and 07-JAJ-042-R1]**~~ ~~**(2) The free phenol content of the novalac resin may not exceed 1.5%, by weight. [s. 285.65(7), Wis. Stats., and 05-JAJ-015]**~~ (~~3~~1) The ~~wet scrubber~~oxidizer shall achieve one of the following: (a) An overall control efficiency of ~~64~~99% for VOC emissions, as required under I.E.3.a.(1)(b)(i), (b) An overall control efficiency of ~~54.5~~99% for phenol emissions, or (c) A maximum emission rate of ~~2.8~~0.19 lb/hr.[8] [s. 285.65(7), Wis. Stats., 05-JAJ-015 and 627005280-P02]	~~**(1) Each calendar month, the permittee shall calculate the phenol emissions from this stack as follows. This calculation shall be performed within 15 calendar days of the end of each month. [s. NR 407.09(4)(a)1., Wis. Adm. Code]**~~ ~~$E_{phenol} = \Sigma[(EF_i \times Z_i) \times (1 - C_{eff})]$.~~ ~~Where:~~ ~~$E_{phenol}$ is the monthly phenol emmissions in pounds per month;~~ ~~EF_i is an emission factor of the amount of phenol emitted per pound of each resin "i" used (lbs-phenol/lb-resin)[9];~~ ~~Z_i is the amount of resin "i" used in pounds per month; and~~ ~~C_{eff} is the efficiency of any control device controlling phenol emissions.[10]~~ ~~**(2) To demonstrate compliance with condition I.E.4.a.(1), the permittee shall calculate the average phenol emissions from the facility over each 12 consecutive month period by summing the monthly phenol emissions as calculated in I.E.4.b.(1) for each consecutive 12 month period and dividing this total by 12. This calculation shall be performed within 15 calendar days of the end of each month for the previous 12 consecutive month period. [s. NR 407.09(4)(a)1., Wis. Adm. Code]**~~ (~~3~~1) As required under I.E.3.b.(3).	**(1)** Whenever Phenol compliance testing is required, NIOSH Method 2546, or another method approved by the Department in writing shall be used. When approved in writing an equivalent test method may be substituted for the required test method. [s. NR 439.06(8), Wis. Adm. Code, and 05-JAJ-015] ~~**(2) The permittee shall record and maintain records of the following:**~~ ~~(a) The monthly total of each resin used each month,~~ ~~(b) The monthly phenol emission rate, according to I.E.4.b.(1),~~ ~~(c) The 12-month rolling average phenol emission rate for each consecutive 12-month period, as calculated per I.E.4.b.(2), and~~ ~~(d) Material safety data sheets or other technical documents which show the free phenol content of each resin used.~~ ~~[s. NR 407.09(4)(a)1., Wis. Adm. Code, and s. 285.65(7), Wis. Stats., and 05-JAJ-015]~~ (~~3~~2) As required under I.E.1.c.(3).

[8] This emission limitation established under 627005280-P02, along with current limits under (1) – (3) will keep facility-wide potential emissions of phenol to <10 TPY (9.5 TPY).

~~[9] At the time of permit issuance, two types of resins are used, including novalac and resol. The emission factor for novalac resin ($EF_{novalac}$) is 0.0059 lbs-phenol/lb-novalac resin; and the emission factor for resol (EF_{resol}) is 0.0012 lbs-phenol/lb-resol resin. The permittee may use alternate emissions factors as approved by the department in writing.~~

~~[10] At the time of permit issuance C_{eff} is 54.5%, as established by stack testing conducted in June 2006. If the permittee modifies or replaces current control equipment to control phenol emissions, the permittee may use a C_{eff} as determined during the most recent phenol compliance emission test, and as approved by the department in writing.~~

J. Stack S150, Control Device C150, Processes: P151 - Batch Mixer (P151), P152 - Continuous Mixer, and P153 - Sludge Tank

Pollutant	a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
1. Particulate Matter Emissions	**(1)** Emissions may not exceed ~~1.5~~0.71 pounds per hour. [15] [ss. NR 404.08(2) and NR 415.05(1)(m) or 415.05(2), Wis. Adm. Code, and 07-JAJ-042] **(2)** Stack Parameters: These requirements are included because the source was reviewed with these stack parameters and it was determined that no increments or ambient air quality standards will be violated when constructed as proposed. (a) Stack height shall be at least ~~75~~ 92 feet above ground level. (b) The stack outlet diameter may not be greater than 2.27 feet (inside diameter). (c) The stack may not be equipped with a rainhat or other device which impedes the upward flow of the exhaust gases. [s. 285.65(3), Stats. and s. NR 406.10, Wis. Adm. Code, and 07-JAJ-042]	**(1)** The ~~wet scrubber~~recuperative thermal oxidizer~~control device, including demister~~, shall be in line and shall be operated at all times when the processes are in operation. [s. NR 406.10 and s. NR 407.09(4)(a)1., Wis. Adm. Code, and 07-JAJ-042] **(2)** Instrumentation to monitor the ~~pressure drop across the wet scrubber and demister~~combustion chamber temperature, in ~~inches of water column~~degrees Fahrenheit or Celsius (centigrade), shall be installed and operated properly. [s. NR 439.055(1)(~~e~~d), Wis. Adm. Code, and 07-JAJ-042] ~~**(3) To verify wet scrubber liquor flow, the permittee shall do one of the following:**~~ ~~(a) Operate instrumentation to monitor monitor the wet scrubber liquor flow rate, in gallons per minute. [s. NR 439.055(1)(e), Wis. Adm. Code, and 07-JAJ-042]; or~~ ~~(b) Conduct visual inspections of scrubber liquor pump flow to confirm return flow of scrubber liquor to the sludge tank and monitor and record the motor power of the scrubber liquor recirculation pump. [s. 285.65(4), Wis. Stats., and s. NR 407.09(4), Wis. Adm. Code]~~	**(1)** Reference Test Method for Particulate Matter Emissions: Whenever particulate matter emission testing is required, the permittee shall use U.S. EPA Method 5, 5A, 5B, 5D, 5E, 5F, 5G, 5H or 17 including condensible backhalf emissions (U.S. EPA Method 202). [s. NR 439.06(1), Wis. Adm. Code] **(2)** The permittee shall keep and maintain on site technical drawings, blueprints or equivalent records of the physical stack parameters. [s. NR 439.04(1)(d), Wis. Adm. Code, and 07-JAJ-042] **(3)** The permittee shall ~~measure~~ monitor and record the temperature of the combustion chamber every 15 minutes~~following operational variables once for every 8 hours of operation or once per day, whichever yields the greater number of measurements:~~ ~~(a) Pressure drop across the wet scrubber and demister, in inches of water column;~~ ~~(b) pH of the absorption scrubbing fluid; and~~ ~~(c) Either~~ ~~(i) Flow of liquor, in gallons per minute;~~ ~~OR~~ ~~(ii) Motor power of the scrubber liquor recirculation pump, and the results of the visual~~

[15] The ~~1.5~~0.71 pounds per hour emission limit is based on modeling and is included in the permit to protect the National Ambient Air Quality Standards (NAAQS). This emission limit is more restrictive than the allowable emission limit of 5.18 pounds per hour calculated from the from 0.2 pounds per 1,000 pounds of exhaust gas limit in s. NR 415.05(1)(m), Wis. Adm. Code. The emission rate determined using the process weight equation is less restrictive than the emission limit calculated from 0.2 pounds per 1,000 pounds of exhaust gas limit in s. NR 415.05(1)(m), Wis. Adm. Code.

J. Stack S150, Control Device C150, Processes: P151 - Batch Mixer (P151), P152 - Continuous Mixer, and P153 - Sludge Tank

Pollutant	a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
		~~(4) Instrumentation and laboratory techniques[16] to monitor the pH of the wet scrubber absorbing fluid shall be utilized properly. [s. NR 439.055(1)(f), Wis. Adm. Code, and 07-JAJ-042]~~ (~~5~~3) The ~~pressure drop across the wet scrubber and demister~~temperature of the combustion chamber shall be no less than 1,400 degrees Fahrenheit ~~shall be maintained between 8 and 17 inches water column~~, or an alternative ~~range~~ level approved in writing by the Department. [s. NR 407.09(4)(a)1., Wis. Adm. Code, and 07-JAJ-042]	~~inspections required by I.J.1.b.(3)(b), including the date, time, and name or initials of the individual performing the inspection.~~ [s. NR 439.055(2)(b), Wis. Adm. Code, and s. 285.65(4), Wis. Stats., and 07-JAJ-042] **(4)** The permittee shall keep records of all inspections, checks and any maintenance or repairs performed on the ~~wet scrubber~~oxidizer system, containing the date of the action, initials of inspector, and the results. [s. NR 439.04(1)(d), Wis. Adm. Code, and 07-JAJ-042] **(5)** The ~~wet scrubber pressure drop, liquor flow, and pH~~oxidizer combustion chamber temperature monitoring devices shall be maintained in accordance with the manufacturer's recommendations and shall be calibrated at least once per year. [s. NR 439.11(1)(b) and s. NR 439.055(4), Wis. Adm. Code, and 07-JAJ-042]
2. Visible Emissions	**(1)** Emissions of shade or density may not exceed number 1 of the Ringlemann chart or 20% opacity. [s. NR 431.05, Wis. Adm. Code, and 07-JAJ-042]	**(1)** The requirements in I.J.1.b. and I.J.1.c. shall be used to demonstrate compliance with the visible emissions limit. [s. NR 407.09(4)(a)3.b., Wis. Adm. Code, and 07-JAJ-042]	**(1)** Reference Test Method for Visible Emissions: Whenever visible emission testing is required, the permittee shall use U.S. EPA Method 9. [s. NR 439.06(9)(a)1., Wis. Adm. Code]
3. Volatile Organic Compounds	**(1)** Latest Available Control Techniques and operating practices demonstrating best current technology (LACT). The permittee has demonstrated that 85% control of VOC emissions leaving the ~~wet scrubber~~oxidizer is technologically infeasible for the process line, and so	**(1)** The facility shall operate the ~~wet scrubber~~oxidizer at all times the processes are operating. [s. NR 406.10 and s. NR 407.09(4)(a)1., Wis. Adm. Code, and 07-JAJ-042] **(2)** As required under I.J.1.b.(2)-(4).	**(1)** Whenever VOC compliance testing is required, USEPA Method 18, 25 or 25A, or another method approved by the Department in writing shall be used. When approved in writing an equivalent test method may be substituted for the required test method. [s. NR 439.06(3), Wis. Adm. Code, and 07-JAJ-042]

~~[16] Atlas takes samples from the sludge tank manually and are measured in the laboratory.~~

J. Stack S150, Control Device C150, Processes: P151 - Batch Mixer (P151), P152 - Continuous Mixer, and P153 - Sludge Tank

Pollutant	a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
	shall use LACT. LACT is defined as the following process operation practices and limitations: (a) The facility shall operate the ~~wet scrubber~~oxidizer at all times the processes P151, P152 and P153 are operational, with monitoring of parameters: ~~pressure differential, liquor flow rate, and pH of the scrubbing fluid~~combustion chamber temperature. (b) The ~~wet scrubber~~oxidizer shall achieve one of the following: (i) An overall control efficiency of ~~64~~99% for VOC emissions, or (ii) VOC emission rate no greater than ~~11.00~~0.19 pounds per hour. [s. NR 424.03(2)(c), Wis. Adm. Code, and 07-JAJ-042] **(2)** Compliance Assurance Monitoring (CAM) Requirements: Processes exhausting to C150/S150 are a pollutant-specific emissions unit for volatile organic compounds and is subject to the CAM requirements of 40 CFR, part 64. The permittee's Compliance Assurance Monitoring Plan for Scrubber C150 for volatile organic compound control is included as Part III of this permit. [s. 285.65(13), Wis. Stats. 40 CFR 64.2 and 40 CFR 64.3(d)]	**(3)** The ~~pressure drop across the wet scrubber and demister, the liquor flow rate, and the pH of the scrubbing fluid~~combustion chamber temperature shall be maintained per manufacturer specifications, the most recent compliance test, the malfunction prevention and abatement plan required under I.ZZZ.1., or the CAM Plan required under Part III to meet the requirements under I.J.3.a.(1) and I.J.1.a.(1). [s. NR 419.03(1), Wis. Adm. Code, and s. 285.65(7), Wis. Stats., and 07-JAJ-042]	**(2)** As required under I.J.1.c.(3)-(5). ~~**(3)** The permittee shall inspect the circulation pump and packing of the wet scrubber monthly. [s. NR 439.04(1)(d), Wis. Adm. Code, and 07-JAJ-042]~~ **(43)** The permittee shall keep records of all inspections, checks and any maintenance or repairs performed on the ~~wet scrubber~~oxidizer, containing the date of the action, initials of inspector, and the results. [s. NR 439.04(1)(d), Wis. Adm. Code, and 07-JAJ-042]
4. Phenol Emissions	~~**(1)** The processes may not emit more than 1,583 pounds of phenol per month, based on a 12-month rolling average (9.5 tons per year). [s.~~	~~**(1)** Each calendar month, the permittee shall calculate the phenol emissions from this stack as follows. This calculation shall be performed within 15 calendar days of the end of each~~	**(1)** Whenever Phenol compliance testing is required, NIOSH Method 2546, or another method approved by the Department in writing shall be used. When approved in writing an

J. Stack S150, Control Device C150, Processes: P151 - Batch Mixer (P151), P152 - Continuous Mixer, and P153 - Sludge Tank

Pollutant	a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
	~~285.65(7), Wis. Stats., and 07-JAJ-042]~~ ~~(2) The free phenol content of the novalac resin may not exceed 1.5%, by weight. [s. 285.65(7), Wis. Stats., and 07-JAJ-042]~~ (~~3~~1) The ~~wet scrubber~~oxiidzer shall achieve one of the following: (a) An overall control efficiency of ~~64~~99% for VOC emissions, as required under I.J.3.a.(1)(b)(i), (b) An overall control efficiency of ~~54.5~~99% for phenol emissions, or (c) A maximum emission rate of ~~3.3~~0.19 lb/hr.[17] [s. 285.65(7), Wis. Stats., and 07-JAJ-042, and 627005280-P02]	~~month. [s. NR 407.09(4)(a)1., Wis. Adm. Code]~~ ~~$E_{phenol} = \Sigma[(EF_i \times Z_i) \times (1 - C_{eff})]$.~~ ~~Where:~~ ~~$E_{phenol}$ is the monthly phenol emmissions in pounds per month;~~ ~~EF_i is an emission factor of the amount of phenol emitted per pound of each resin "i" used (lbs phenol/lb resin)[18];~~ ~~Z_i is the amount of resin "i" used in pounds per month; and~~ ~~C_{eff} is the efficiency of any control device controlling phenol emissions.[19]~~ ~~(2) To demonstrate compliance with condition I.J.4.a.(1), the permittee shall calculate the average phenol emissions from the facility over each 12 consecutive month period by summing the monthly phenol emissions as calculated in I.J.4.b.(1) for each consecutive 12 month period and dividing this total by 12. This calculation shall be performed within 15 calendar days of the end of each month for the previous 12 consecutive month period. [s. NR 407.09(4)(a)1., Wis. Adm. Code]~~ (~~3~~1) As required under I.J.3.b.(3).	equivalent test method may be substituted for the required test method. [s. NR 439.06(8), Wis. Adm. Code, and 07-JAJ-042] ~~(2) The permittee shall record and maintain records of the following:~~ ~~(a) The monthly total of each resin used each month,~~ ~~(b) The monthly phenol emission rate, according to I.J.4.b.(1),~~ ~~(c) The 12 month rolling average phenol emission rate for each consecutive 12 month period, as calculated per I.J.4.b.(2), and~~ ~~(c) Material safety data sheets or other technical documents which show the free phenol content of the each resin used.~~ ~~[s. NR 407.09(4)(a)1., Wis. Adm. Code, and s. 285.65(7), Wis. Stats., and 07-JAJ-042]~~ (~~3~~2) As required under I.J.1.c.(3).

[17] This ~~emission limitation established under 627005280-P02, along with~~ current limits under (1) – (3) will keep facility-wide potential emissions of phenol to <10 TPY (9.5 TPY).

~~[18] At the time of permit issuance, two types of resins are used, including novalac and resol. The emission factor for novalac resin ($EF_{novalac}$) is 0.0041 lbs phenol/lb novalac resin; and the emission factor for resol (EF_{resol}) is 0.0012 lbs phenol/lb resol resin. The permittee may use alternate emissions factors as approved by the department in writing.~~

~~[19] At the time of permit issuance C_{eff} is 54.5%, as established by stack testing conducted in June 2006. If the permittee modifies or replaces current control equipment to control phenol emissions, the permittee may use a C_{eff} as determined during the most recent phenol compliance emission test, and as approved by the department in writing.~~

XXX. Facility Wide Emission Limitations

Pollutant	a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
1. Ammonia	~~(1) Facility wide ammonia emissions may not exceed 237.5 tons during any 12 consecutive month period.[20] [s. 285.65(7), Wis. Stats. and ss. NR 445.07(1)(a) and NR 445.08(2)(a), Wis. Adm. Code]~~ (~~2~~1) * The permittee shall limit ~~facility wide ammonia emissions in one of the following ways:~~ ~~(a) Limit hexamethylenetetramine (hexa) use to not more than the following rates [ss. NR 445.07(1)(a) and NR 445.08(2)(b), Wis. Adm. Code]:~~ ~~(i) Total hexa usage in Tower A and Tower B, combined may not exceed 7,310 pounds per day;~~ ~~(ii) Hexa usage in Tower A may not exceed 5,375 pounds per day; AND~~ ~~(iii) Hexa usage in Tower B may not exceed 7,029 pounds per day.~~ ~~OR~~ ~~(b) Limit ammonia emissions to less than 28.2 pounds per hour averaged daily.~~ ~~OR~~ ~~(c) Limit~~ the quantity, concentration, or duration of non-exempt ammonia emissions so that the ambient concentration off the source property is less than the concentration allowed under	~~(1) Each calendar month, the permittee shall calculate the facility wide ammonia emissions as follows. This calculation shall be performed within 15 calendar days of the end of each month. [s. NR 407.09(4)(a)1., Wis. Adm. Code]~~ ~~$E_{NH3} = (0.27928 \times Z_{hexa}) \times (1 - C_{eff}) \times (1\ ton/2000\ lbs)$~~ ~~Where:~~ ~~$E_{NH3}$ is the monthly ammonia emmissions in tons per month;~~ ~~0.27928 is an emission factor of the amount of ammonia emitted per pound of hexa used (lbs NH_3/lb hexa soln);~~ ~~Z_{hexa} is the amount of hexa used during the month in pounds per month; and~~ ~~C_{eff} is the efficiency of any control device controlling ammonia emissions.[21]~~ ~~(2) To demonstrate compliance with condition I.XXX.1.a.(1), the permittee shall calculate the total ammonia emissions from the facility over each 12 consecutive month period by summing the monthly ammonia emissions as calculated in I.XXX.1.b.(1) for each consecutive 12 month period. This calculation shall be performed within fifteen calendar days of the end of each month for the previous 12 consecutive month period. [s. NR 407.09(4)(a)1., Wis. Adm. Code]~~ (~~3~~1) To demonstrate compliance with I.XXX.1.a.(~~2~~1), the permittee shall keep the records required by	(1) Reference Test Method for Ammonia Emissions: Whenever ammonia emission testing is required, the permittee shall use U.S. EPA Method 206 (a.k.a. CTM-027) or other appropriate test method approved by the department in writing. [s. NR 439.06(8), Wis. Adm. Code] ~~(2) The permittee shall keep monthly records of:~~ ~~(a) The amount of hexamethylenetetramine (hexa) used at the facility in pounds per month;~~ ~~(b) The total monthly facility wide ammonia emissions (E_{NH3}) in tons per month as calculated in I.XXX.1.b.(1); and~~ ~~(c) The total ammonia emissions from the facility in tons per year as calculated in I.XXX.1.b.(2).~~ ~~[s. NR 439.04(1)(d), Wis. Adm. Code]~~ (~~3~~2) To demonstrate compliance with condition I.XXX.1.a.(1), ~~The permittee shall maintain records as follows:~~ ~~(a) If complying with condition I.XXX.1.a.(2)(a), the permittee shall keep daily records of hexa use for:~~ ~~(i) Tower A;~~ ~~(ii) Tower B; and~~ ~~(iii) Towers A and B combined.~~ ~~(b) If complying with condition~~

~~[20] The permittee elected this limitation. This limitation also ensures that annual, facility wide ammonia emissions are less than the ch. NR 445, Table A value of 612,587 pounds per year.~~

~~[21] At the time of permit issuance C_{eff} is zero. If the permittee installs equipment to control ammonia emissions, or modifies existing equipment to control ammonia emissions, the permittee may use a C_{eff} as determined during the most recent ammonia compliance emission test, and as approved by the department in writing.~~

XXX. Facility Wide Emission Limitations

Pollutant	a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
	column (g) of Table A of s. NR 445.07. [ss. NR 445.07(1)(a) and NR 445.08(2)(a), (b) and (e), Wis. Adm. Code]	I.XXX.1.c.(~~3~~2). [s. NR 407.09(4)(a)1., Wis. Adm. Code] ~~(4) If complying with I.XXX.1.a.(2)(b), the permittee shall use one of the following methods as approved by the department in writing:~~ ~~(a) calculate daily average, hourly ammonia emissions as follows:~~ ~~$E_{daily} = (0.27928 \times W_{hexa}) \times (1 - C_{eff}) \times (1\ day/24\ hours)$~~ ~~Where:~~ ~~$E_{daily}$ is the daily average hourly ammonia emmissions in pounds per hour;~~ ~~0.27928 is an emission factor of the amount of ammonia emitted per pound of hexa used (lbs NH_3/lb hexa);~~ ~~W_{hexa} is the amount of hexa used during the day in pounds per day; and~~ ~~C_{eff} is the efficiency of any control device controlling ammonia emissions.[22]; OR~~ ~~(b) Operate the ammonia control device(s) and associated monitoring equipment, so that the control device parameters monitored during the compliance emisison testing under I.XXX.1.b.(5) are monitored and maintained within the normal operating ranges determined during the compliance emission test and as approved by the department in writing.~~ ~~[s. NR 407.09(4)(a)1., Wis. Adm. Code]~~ (~~5~~2) In order to take ammonia control equipment into	~~I.XXX.1.a.(2)(b), the permittee shall~~ keep ~~records of either:~~ ~~(i) the daily average, hourly ammonia emissions, as calculated in I.XXX.1.b.(4); OR~~ ~~(ii) the ammonia control device parameter operating value(s) as monitored according to I.XXX.1.b.(4) and as approved by the department in writing.[23]~~ ~~(c) If complying with condition I.XXX.1.a.(2)(c),~~ the permittee shall maintain dispersion modeling files (AERMOD) sufficient to demonstrate that ammonia concentrations of the source property are less than the concentration allowed under column (g) of Table A of s. NR 445.07. [s. NR 439.04(1)(d), Wis. Adm. Code] (43) The permittee shall maintain records of: (a) The report summarizing any compliance emission testing performed under I.XXX.1.b.(~~5~~2); (b) The ammonia control efficiency determined during any testing; and (c) ~~A copy of any department's written approval to use a control efficiency when performing the calculations in I.XXX.1.b.(1), (2), and (4);~~ ~~(d)~~ A copy of the normal operating ranges

~~[22] At the time of permit issuance C_{eff} is zero~~82 ~~percent. If the permittee installs equipment to control ammonia emissions, or modifies existing equipment to control ammonia emissions, the permittee may use a C_{eff} as determined during the most recent ammonia compliance emission test, and as approved by the department in writing.~~

~~[23] The department approval to use ammonia control device parameter monitoring to demonstrate compliance with I.XXX.1.a.(2), will specify: (1) the parameters to be monitored; (2) the frequency that each parameter will be monitored and recorded; and (3) the normal operating range(s) of the parameter(s) to be monitored as determined during the compliance emission test required by I.XXX.1.b.(5).~~

XXX. Facility Wide Emission Limitations

Pollutant	a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
		account when demonstrating compliance with the requirements of I.XXX.1.a.(1) ~~and (2)~~, the permittee shall: (a) Perform compliance emission testing to determine the ammonia control efficiency of any ammonia control device; (b) Perform the compliance emission testing in accordance with the requirements of section I.ZZZ.2.; (c) Monitor appropriate control device parameters as required by s. NR 439.055, Wis. Adm. Code, or other appropriate control device parameters as approved by the department, during the compliance emission testing; and (d) Establish normal operating ranges for control device parameters monitored as required by I.XXX.1.b.(~~5~~2)(c).~~;~~ ~~(e) Submit a request for written department approval to use the control efficiency determined during the compliance emission test when calculating ammonia emissions according to the equations in I.XXX.1.b.(1), (2), and (4). This written request shall include, but not be limited to:~~ ~~(i) A summary of the compliance emission test results, including the ammonia control efficiency determined during the test;~~ ~~(ii) The control device parameters monitored during the compliance emission test, including the normal operating ranges established during the test; AND~~ ~~(iii) Calculations showing that ammonia emissions will be less than 28.2 pounds per hour, averaged daily while operating the control device(s) within the established normal operating ranges; OR~~ ~~(iv) Air dispersion modeling results which demonstrate that ammonia emission result in an ambient air concentration off the source property that is less than the concentration allowed under~~	established for the control device parameters monitored during the emission testing performed under I.XXX.1.b.(~~5~~2)~~;~~). ~~and~~ ~~(e) A copy of any department approval to use ammonia control device parameter monitoring to demonstrate compliance with I.XXX.1.a.(2)(b) in lieu of daily average, hourly ammonia emission calculations as allowed in I.XXX.1.b.(4).~~ [s. NR 439.04(1)(d), Wis. Adm. Code]

XXX. Facility Wide Emission Limitations

Pollutant	a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
		~~column (g) of Table A of NR 445.07.~~ [s. NR 439.075(1)(b), Wis. Adm. Code]	

E.2 AFFECTED PERMIT PAGES – VERSION 2 WITH CHANGES INCORPORATED FOR CLARITY

E. Stack S50, Control Device C50 - Processes: P51 - Batch Mixer, P52 - Continuous Mixer, and P53 - Sludge Tank #1 [Constructed 2005]

Pollutant	a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
1. Particulate Matter Emissions	**(1)** Emissions may not exceed 0.71 pounds per hour. [6] [ss. NR 404.08(2) and NR 415.05(1)(m) or 415.05(2), Wis. Adm. Code, and 05-JAJ-015] **(2)** Stack Parameters: These requirements are included because the source was reviewed with these stack parameters and it was determined that no increments or ambient air quality standards will be violated when constructed as proposed. (a) Stack height shall be at least 92 feet above ground level. (b) The stack outlet diameter may not be greater than 2.47 feet (inside diameter). (c) The stack may not be equipped with a rainhat or other device which impedes the upward flow of the exhaust gases. [s. 285.65(3), Stats. and s. NR 406.10, Wis. Adm. Code, and 05-JAJ-015]	**(1)** The recuperative thermal oxidizer shall be in line and shall be operated at all times when the processes are in operation. [s. NR 406.10 and s. NR 407.09(4)(a)1., Wis. Adm. Code, and 05-JAJ-015] **(2)** Instrumentation to monitor the combustion chamber temperature, in degrees Fahrenheit or Celsius (centigrade), shall be operated properly. [s. NR 439.055(1)(d), Wis. Adm. Code, and 05-JAJ-015] **(3)** The temperature of the combustion chamber shall be no less than 1,400 degrees Fahrenheit, or an alternative level approved in writing by the Department. [s. NR 407.09(4)(a)1., Wis. Adm. Code, and 05-JAJ-015]	**(1)** Reference Test Method for Particulate Matter Emissions: Whenever particulate matter emission testing is required, the permittee shall use U.S. EPA Method 5, 5A, 5B, 5D, 5E, 5F, 5G, 5H or 17 including condensible backhalf emissions (U.S. EPA Method 202). [s. NR 439.06(1), Wis. Adm. Code] **(2)** The permittee shall keep and maintain on site technical drawings, blueprints or equivalent records of the physical stack parameters. [s. NR 439.04(1)(d), Wis. Adm. Code, and 05-JAJ-015] **(3)** The permittee shall monitor and record the temperature of the combustion chamber every 15 minutes [s. NR 439.055(2)(a), Wis. Adm. Code, and s. 285.65(4), Wis. Stats., and 05-JAJ-015] **(4)** The permittee shall keep records of all inspections, checks and any maintenance or repairs performed on the oxidizer system, containing the date of the action, initials of inspector, and the results. [s. NR 439.04(1)(d), Wis. Adm. Code, and 05-JAJ-015] **(5)** The oxidizer combustion chamber temperature monitoring device shall be maintained in accordance with the

[6] The 0.71 pounds per hour emission limit is based on modeling and is included in the permit to protect the National Ambient Air Quality Standards (NAAQS). This emission limit is more restrictive than the allowable emission limit of 5.18 pounds per hour calculated from the from 0.2 pounds per 1,000 pounds of exhaust gas limit in s. NR 415.05(1)(m), Wis. Adm. Code. The emission rate determined using the process weight equation is less restrictive than the emission limit calculated from 0.2 pounds per 1,000 pounds of exhaust gas limit in s. NR 415.05(1)(m), Wis. Adm. Code.

E. Stack S50, Control Device C50 - Processes: P51 - Batch Mixer, P52 - Continuous Mixer, and P53 - Sludge Tank #1 [Constructed 2005]

Pollutant	a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
			manufacturer's recommendations and shall be calibrated at least once per year. [s. NR 439.11(1)(b) and s. NR 439.055(4), Wis. Adm. Code, and 05-JAJ-015]
2. Visible Emissions	**(1)** Emissions of shade or density may not exceed number 1 of the Ringlemann chart or 20% opacity. [s. NR 431.05, Wis. Adm. Code, and 05-JAJ-015]	**(1)** The requirements in I.E.1.b. and I.E.1.c. shall be used to demonstrate compliance with the visible emissions limit. [s. NR 407.09(4)(a)3.b., Wis. Adm. Code, and 05-JAJ-015]	**(1)** Reference Test Method for Visible Emissions: Whenever visible emission testing is required, the permittee shall use U.S. EPA Method 9. [s. NR 439.06(9)(a)1., Wis. Adm. Code]
3. Volatile Organic Compounds	**(1)** Latest Available Control Techniques and operating practices demonstrating best current technology (LACT). The permittee has demonstrated that 85% control of VOC emissions leaving the oxidizer is technologically infeasible for the process line, and so shall use LACT. LACT is defined as the following process operation practices and limitations: (a) The facility shall operate the oxidizer at all times the processes P51, P52 and P53 are operational, with monitoring of parameters: combustion chamber temperature. (b) The oxidizer shall achieve one of the following: (i) An overall control efficiency of 99% for VOC emissions, or (ii) VOC emission rate no greater than 0.19 pounds per hour. [s. NR 424.03(2)(c), Wis. Adm. Code, and 05-JAJ-015]	**(1)** The facility shall operate the oxidizer at all times the processes are operating. [s. NR 406.10 and s. NR 407.09(4)(a)1., Wis. Adm. Code, and 05-JAJ-015] **(2)** As required under I.E.1.b.(2)-(4). **(3)** The combustion chamber temperature shall be maintained per manufacturer specifications, the most recent compliance test, the malfunction prevention and abatement plan required under I.ZZZ.1., or the CAM plan required under Part III to meet the requirements under I.E.3.a.(1) and I.E.1.a.(1). [s. NR 419.03(1), Wis. Adm. Code, and s. 285.65(7), Wis. Stats., and 05-JAJ-015]	**(1)** Whenever VOC compliance testing is required, USEPA Method 18, 25 or 25A, or another method approved by the Department in writing shall be used. When approved in writing an equivalent test method may be substituted for the required test method. [s. NR 439.06(3), Wis. Adm. Code, and 05-JAJ-015] **(2)** As required under I.E.1.c.(3)-(5). **(3)** The permittee shall keep records of all inspections, checks and any maintenance or repairs performed on the oxidizer, containing the date of the action, initials of inspector, and the results. [s. NR 439.04(1)(d), Wis. Adm. Code, and 05-JAJ-015]

E. Stack S50, Control Device C50 - Processes: P51 - Batch Mixer, P52 - Continuous Mixer, and P53 - Sludge Tank #1 [Constructed 2005]

Pollutant	a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
	(2) Compliance Assurance Monitoring (CAM) Requirements: Processes exhausting to C50/S50 are a pollutant-specific emissions unit for volatile organic compounds and is subject to the CAM requirements of 40 CFR, part 64. The permittee's Compliance Assurance Monitoring Plan for Scrubber C50 for volatile organic compound control is included as Part III of this permit. [s. 285.65(13), Wis. Stats. 40 CFR 64.2 and 40 CFR 64.3(d)]		
4. Phenol Emissions	**(1)** The oxidizer shall achieve one of the following: (a) An overall control efficiency of 99% for VOC emissions, as required under I.E.3.a.(1)(b)(i), (b) An overall control efficiency of 99% for phenol emissions, or (c) A maximum emission rate of 0.19 lb/hr.[8] [s. 285.65(7), Wis. Stats., 05-JAJ-015 and 627005280-P02]	**(1)** As required under I.E.3.b.(3).	**(1)** Whenever Phenol compliance testing is required, NIOSH Method 2546, or another method approved by the Department in writing shall be used. When approved in writing an equivalent test method may be substituted for the required test method. [s. NR 439.06(8), Wis. Adm. Code, and 05-JAJ-015] **(2)** As required under I.E.1.c.(3).

[8] This emission limitation established under 627005280-P02, along with current limits under (1) – (3) will keep facility-wide potential emissions of phenol to <10 TPY (9.5 TPY).

J. Stack S150, Control Device C150, Processes: P151 - Batch Mixer (P151), P152 - Continuous Mixer, and P153 - Sludge Tank

Pollutant	a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
1. Particulate Matter Emissions	**(1)** Emissions may not exceed 0.71 pounds per hour. [15] [ss. NR 404.08(2) and NR 415.05(1)(m) or 415.05(2), Wis. Adm. Code, and 07-JAJ-042] **(2)** Stack Parameters: These requirements are included because the source was reviewed with these stack parameters and it was determined that no increments or ambient air quality standards will be violated when constructed as proposed. (a) Stack height shall be at least 92 feet above ground level. (b) The stack outlet diameter may not be greater than 2.27 feet (inside diameter). (c) The stack may not be equipped with a rainhat or other device which impedes the upward flow of the exhaust gases. [s. 285.65(3), Stats. and s. NR 406.10, Wis. Adm. Code, and 07-JAJ-042]	**(1)** The recuperative thermal oxidizer, shall be in line and shall be operated at all times when the processes are in operation. [s. NR 406.10 and s. NR 407.09(4)(a)1., Wis. Adm. Code, and 07-JAJ-042] **(2)** Instrumentation to monitor the combustion chamber temperature, in degrees Fahrenheit or Celsius (centigrade), shall be installed and operated properly. [s. NR 439.055(1)(d), Wis. Adm. Code, and 07-JAJ-042] **(3)** The temperature of the combustion chamber shall be no less than 1,400 degrees Fahrenheit, or an alternative level approved in writing by the Department. [s. NR 407.09(4)(a)1., Wis. Adm. Code, and 07-JAJ-042]	**(1)** Reference Test Method for Particulate Matter Emissions: Whenever particulate matter emission testing is required, the permittee shall use U.S. EPA Method 5, 5A, 5B, 5D, 5E, 5F, 5G, 5H or 17 including condensible backhalf emissions (U.S. EPA Method 202). [s. NR 439.06(1), Wis. Adm. Code] **(2)** The permittee shall keep and maintain on site technical drawings, blueprints or equivalent records of the physical stack parameters. [s. NR 439.04(1)(d), Wis. Adm. Code, and 07-JAJ-042] **(3)** The permittee shall monitor and record the temperature of the combustion chamber every 15 minutes [s. NR 439.055(2)(b), Wis. Adm. Code, and s. 285.65(4), Wis. Stats., and 07-JAJ-042] **(4)** The permittee shall keep records of all inspections, checks and any maintenance or repairs performed on the oxidizer system, containing the date of the action, initials of inspector, and the results. [s. NR 439.04(1)(d), Wis. Adm. Code, and 07-JAJ-042] **(5)** The oxidizer combustion chamber temperature monitoring devices shall be maintained in accordance with the manufacturer's recommendations and shall be

[15] The 0.71 pounds per hour emission limit is based on modeling and is included in the permit to protect the National Ambient Air Quality Standards (NAAQS). This emission limit is more restrictive than the allowable emission limit of 5.18 pounds per hour calculated from the from 0.2 pounds per 1,000 pounds of exhaust gas limit in s. NR 415.05(1)(m), Wis. Adm. Code. The emission rate determined using the process weight equation is less restrictive than the emission limit calculated from 0.2 pounds per 1,000 pounds of exhaust gas limit in s. NR 415.05(1)(m), Wis. Adm. Code.

J. Stack S150, Control Device C150, Processes: P151 - Batch Mixer (P151), P152 - Continuous Mixer, and P153 - Sludge Tank

Pollutant	a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
			calibrated at least once per year. [s. NR 439.11(1)(b) and s. NR 439.055(4), Wis. Adm. Code, and 07-JAJ-042]
2. Visible Emissions	**(1)** Emissions of shade or density may not exceed number 1 of the Ringlemann chart or 20% opacity. [s. NR 431.05, Wis. Adm. Code, and 07-JAJ-042]	**(1)** The requirements in I.J.1.b. and I.J.1.c. shall be used to demonstrate compliance with the visible emissions limit. [s. NR 407.09(4)(a)3.b., Wis. Adm. Code, and 07-JAJ-042]	**(1)** Reference Test Method for Visible Emissions: Whenever visible emission testing is required, the permittee shall use U.S. EPA Method 9. [s. NR 439.06(9)(a)1., Wis. Adm. Code]
3. Volatile Organic Compounds	**(1)** Latest Available Control Techniques and operating practices demonstrating best current technology (LACT). The permittee has demonstrated that 85% control of VOC emissions leaving the oxidizer is technologically infeasible for the process line, and so shall use LACT. LACT is defined as the following process operation practices and limitations: (a) The facility shall operate the oxidizer at all times the processes P151, P152 and P153 are operational, with monitoring of parameters: combustion chamber temperature. (b) The oxidizer shall achieve one of the following: (i) An overall control efficiency of 99% for VOC emissions, or (ii) VOC emission rate no greater than 0.19 pounds per hour. [s. NR 424.03(2)(c), Wis. Adm. Code, and 07-JAJ-042] **(2)** Compliance Assurance Monitoring (CAM) Requirements: Processes exhausting to C150/S150 are a	**(1)** The facility shall operate the oxidizer at all times the processes are operating. [s. NR 406.10 and s. NR 407.09(4)(a)1., Wis. Adm. Code, and 07-JAJ-042] **(2)** As required under I.J.1.b.(2)-(4). **(3)** The combustion chamber temperature shall be maintained per manufacturer specifications, the most recent compliance test, the malfunction prevention and abatement plan required under I.ZZZ.1., or the CAM Plan required under Part III to meet the requirements under I.J.3.a.(1) and I.J.1.a.(1). [s. NR 419.03(1), Wis. Adm. Code, and s. 285.65(7), Wis. Stats., and 07-JAJ-042]	**(1)** Whenever VOC compliance testing is required, USEPA Method 18, 25 or 25A, or another method approved by the Department in writing shall be used. When approved in writing an equivalent test method may be substituted for the required test method. [s. NR 439.06(3), Wis. Adm. Code, and 07-JAJ-042] **(2)** As required under I.J.1.c.(3)-(5). **(3)** The permittee shall keep records of all inspections, checks and any maintenance or repairs performed on the oxidizer, containing the date of the action, initials of inspector, and the results. [s. NR 439.04(1)(d), Wis. Adm. Code, and 07-JAJ-042]

J. Stack S150, Control Device C150, Processes: P151 - Batch Mixer (P151), P152 - Continuous Mixer, and P153 - Sludge Tank

Pollutant	a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
	pollutant-specific emissions unit for volatile organic compounds and is subject to the CAM requirements of 40 CFR, part 64. The permittee's Compliance Assurance Monitoring Plan for Scrubber C150 for volatile organic compound control is included as Part III of this permit. [s. 285.65(13), Wis. Stats. 40 CFR 64.2 and 40 CFR 64.3(d)]		
4. Phenol Emissions	**(1)** The oxiidzer shall achieve one of the following: (a) An overall control efficiency of 99% for VOC emissions, as required under I.J.3.a.(1)(b)(i), (b) An overall control efficiency of 99% for phenol emissions, or (c) A maximum emission rate of 0.19 lb/hr.[17] [s. 285.65(7), Wis. Stats., and 07-JAJ-042, and 627005280-P02]	**(1)** As required under I.J.3.b.(3).	**(1)** Whenever Phenol compliance testing is required, NIOSH Method 2546, or another method approved by the Department in writing shall be used. When approved in writing an equivalent test method may be substituted for the required test method. [s. NR 439.06(8), Wis. Adm. Code, and 07-JAJ-042] **(2)** As required under I.J.1.c.(3).

[17] This current limits under (1) – (3) will keep facility-wide potential emissions of phenol to <10 TPY (9.5 TPY).

XXX. Facility Wide Emission Limitations

Pollutant	a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
1. Ammonia	(1) * The permittee shall limit the quantity, concentration, or duration of non-exempt ammonia emissions so that the ambient concentration off the source property is less than the concentration allowed under column (g) of Table A of s. NR 445.07. [ss. NR 445.07(1)(a) and NR 445.08(2)(a), (b) and (e), Wis. Adm. Code]	(1) To demonstrate compliance with I.XXX.1.a.(1), the permittee shall keep the records required by I.XXX.1.c.(2). [s. NR 407.09(4)(a)1., Wis. Adm. Code] (2) In order to take ammonia control equipment into account when demonstrating compliance with the requirements of I.XXX.1.a.(1), the permittee shall: (a) Perform compliance emission testing to determine the ammonia control efficiency of any ammonia control device; (b) Perform the compliance emission testing in accordance with the requirements of section I.ZZZ.2.; (c) Monitor appropriate control device parameters as required by s. NR 439.055, Wis. Adm. Code, or other appropriate control device parameters as approved by the department, during the compliance emission testing; and (d) Establish normal operating ranges for control device parameters monitored as required by I.XXX.1.b.(2)(c). [s. NR 439.075(1)(b), Wis. Adm. Code]	(1) Reference Test Method for Ammonia Emissions: Whenever ammonia emission testing is required, the permittee shall use U.S. EPA Method 206 (a.k.a. CTM-027) or other appropriate test method approved by the department in writing. [s. NR 439.06(8), Wis. Adm. Code] (2) To demonstrate compliance with condition I.XXX.1.a.(1), keep the permittee shall maintain dispersion modeling files (AERMOD) sufficient to demonstrate that ammonia concentrations of the source property are less than the concentration allowed under column (g) of Table A of s. NR 445.07. [s. NR 439.04(1)(d), Wis. Adm. Code] (3) The permittee shall maintain records of: (a) The report summarizing any compliance emission testing performed under I.XXX.1.b.(2); (b) The ammonia control efficiency determined during any testing; and (c) A copy of the normal operating ranges established for the control device parameters monitored during the emission testing performed under I.XXX.1.b.(2). [s. NR 439.04(1)(d), Wis. Adm. Code]

E.3 COMPLIANCE ASSURANCE MONITORING PLANS - OXIDIZERS

Compliance Assurance Monitoring Plan
Oxidizer C50
Atlas Resin Proppants, L.L.C., Taylor, Wisconsin

I. Background

A. Emissions Unit

Description:	Batch Mixer, Continuous Mixer and Sludge Tank #1. Constructed 2005.
Identification:	Processes P51-P53; Control Device C50; Stack S50.
Facility:	Atlas Resin Proppants, L.L.C. Taylor, Wisconsin

B. Applicable Regulation, Emissions Limit, and Monitoring Requirements

Regulation:	Permit No. 627005280-P10, Conditions I.E.1.(a)(1), I.E.3.a.(1), and I.E.4.a.(1). NR 404.08(2) and NR 415.05(1)(m) or 415.05(2); NR 424.03(2)(c), Wis. Adm. Code; and s. 285.65(7), Wis. Stats.
Emission Limits:	
Particulate Matter (PM):	0.71 lb/hr
Volatile Organic Compounds (VOCs):	0.19 lb/hr or 99% overall control efficiency
Phenol:	0.19 lb/hr or 99% overall control efficiency for phenol, or 99% overall VOC control efficiency
Monitoring Requirements:	The temperature of the combustion chamber shall be monitored and recorded once every 15 minutes of operation. The combustion chamber temperature shall be no less than 1,400 degrees Fahrenheit or an alternative level approved in writing by the Department.

C. Control Technology

A recuperative thermal oxidizer equipped with chain box and cyclone in advance of the combustion chamber

Compliance Assurance Monitoring Plan
Oxidizer C50
Atlas Resin Proppants, L.L.C., Taylor, Wisconsin

II. Monitoring Approach

The key elements of the monitoring approach, including indicators to be monitored, indicator ranges (levels), and performance criteria are presented in Table 1. The selected performance indicator is monitoring the combustion chamber temperature.

A. Background

Two polymer resin-coated sand manufacturing plants (Towers A and B) are operated at this facility. In each plant, heated sand and flake resin are mixed with a small amount of additives in the Batch Mixer. An aqueous additive solution is added to the Batch Mixer to cross-link the melted flake resin and begin cooling the coated sand. Each Batch Mix is up to 3,100 pounds, and the plant processes up to 12 batches per hour. Each batch is discharged into a Continuous Mixer, which is designed to keep the process flowing as discrete particles until the product has cooled. The Continuous Mixer converts the batch process into a continuous process. A recuperative thermal oxidizer controls emissions, including particulate matter, ammonia, and volatile organic compounds, including phenol, from each mixing process. The baghouse collects PM from the raw sand and finished product handling in each process in the form of silica and resin dust.

B. Rationale for Selection of Performance Indicators

The combustion chamber temperature was selected because it is indicative of the thermal oxidizer operation (combustion occurring within the chamber). If the chamber temperature decreases significantly, adequate combustion may not occur.

It has been shown that the control efficiency achieved by a thermal oxidizer is a function of its operating temperature. By maintaining the operating temperature at or above a minimum, a level of control efficiency can be expected to be achieved.

To ensure compliance with the applicable emissions limits, a minimum temperature must be maintained in the combustion chamber to ensure adequate destruction of organic compounds. Based on manufacturer information, the normal operating temperature is 1,450°F and the minimum operating temperature is 1,400°F.

C. Rationale for Selection of Indicator Ranges

The minimum combustion chamber temperature specified in the preceding section is based on the manufacturer's design and operating specifications.

Table 1. Monitoring Approach for Oxidizer C50

	INDICATOR NO. 1
I. **Indicator**	Combustion Chamber Temperature
Measurement Approach	The chamber temperature is monitored with a thermocouple.
II. **Indicator Range**	An excursion is defined as temperature readings less than 1,400°F; excursions trigger an inspection to confirm the reading and, if necessary to identify corrective actions; and reporting requirements.
III. **Performance Criteria**	
A. **Data Representativeness**	The sensors include (2) Type-K dual element thermocouples in the combustion chamber. The temperature monitoring device shall have an accuracy of 0.5 percent of the temperature being measured in degrees Fahrenheit.
B. **Verification of**	Not applicable
C. **QA/QC Practices and Criteria**	Accuracy of the thermocouple will be verified by a second or redundant thermocouple probe inserted into the combustion chamber. The validation check will be conducted at least annually.
D. **Monitoring Frequency**	Monitored and recorded once every 15 minutes of operation
E. **Data Collection Procedures**	Recorded using a Honeywell digital 2-pen temperature recorder.
F. **Averaging Period**	No average is taken

Compliance Assurance Monitoring Plan
Oxidizer C150
Atlas Resin Proppants, L.L.C., Taylor, Wisconsin

I. Background

A. Emissions Unit

Description:	Batch Mixer, Continuous Mixer and Sludge Tank #1. Constructed 2005.
Identification:	Processes P151-P153; Control Device C150; Stack S150.
Facility:	Atlas Resin Proppants, L.L.C. Taylor, Wisconsin

B. Applicable Regulation, Emissions Limit, and Monitoring Requirements

Regulation:	Permit No. 627005280-P10, Conditions I.E.1.(a)(1), I.E.3.a.(1), and I.E.4.a.(1). NR 404.08(2) and NR 415.05(1)(m) or 415.05(2); NR 424.03(2)(c), Wis. Adm. Code; and s. 285.65(7), Wis. Stats.
Emission Limits:	
Particulate Matter (PM):	0.71 lb/hr
Volatile Organic Compounds (VOCs):	0.19 lb/hr or 99% overall control efficiency
Phenol:	0.19 lb/hr or 99% overall control efficiency for phenol, or 99% overall VOC control efficiency
Monitoring Requirements:	The temperature of the combustion chamber shall be monitored and recorded once every 15 minutes of operation. The combustion chamber temperature shall be no less than 1,400 degrees Fahrenheit or an alternative level approved in writing by the Department.

C. Control Technology

A recuperative thermal oxidizer equipped with chain box and cyclone in advance of the combustion chamber

Compliance Assurance Monitoring Plan
Oxidizer C150
Atlas Resin Proppants, L.L.C., Taylor, Wisconsin

II. Monitoring Approach

The key elements of the monitoring approach, including indicators to be monitored, indicator ranges (levels), and performance criteria are presented in Table 1. The selected performance indicator is monitoring the combustion chamber temperature.

A. Background

Two polymer resin-coated sand manufacturing plants (Towers A and B) are operated at this facility. In each plant, heated sand and flake resin are mixed with a small amount of additives in the Batch Mixer. An aqueous additive solution is added to the Batch Mixer to cross-link the melted flake resin and begin cooling the coated sand. Each Batch Mix is up to 3,100 pounds, and the plant processes up to 12 batches per hour. Each batch is discharged into a Continuous Mixer, which is designed to keep the process flowing as discrete particles until the product has cooled. The Continuous Mixer converts the batch process into a continuous process. A recuperative thermal oxidizer controls emissions, including particulate matter, ammonia, and volatile organic compounds, including phenol, from each mixing process. The baghouse collects PM from the raw sand and finished product handling in each process in the form of silica and resin dust.

B. Rationale for Selection of Performance Indicators

The combustion chamber temperature was selected because it is indicative of the thermal oxidizer operation (combustion occurring within the chamber). If the chamber temperature decreases significantly, adequate combustion may not occur.

It has been shown that the control efficiency achieved by a thermal oxidizer is a function of its operating temperature. By maintaining the operating temperature at or above a minimum, a level of control efficiency can be expected to be achieved.

To ensure compliance with the applicable emissions limits, a minimum temperature must be maintained in the combustion chamber to ensure adequate destruction of organic compounds. Based on manufacturer information, the normal operating temperature is 1,450°F and the minimum operating temperature is 1,400°F.

C. Rationale for Selection of Indicator Ranges

The minimum combustion chamber temperature specified in the preceding section is based on the manufacturer's design and operating specifications.

Table 1. Monitoring Approach for Oxidizer C150

		INDICATOR NO. 1
I.	**Indicator**	Combustion Chamber Temperature
	Measurement Approach	The chamber temperature is monitored with a thermocouple.
II.	**Indicator Range**	An excursion is defined as temperature readings less than 1,400°F; excursions trigger an inspection to confirm the reading and, if necessary to identify corrective actions; and reporting requirements.
III.	**Performance Criteria**	
	A. Data Representativeness	The sensors include (2) Type-K dual element thermocouples in the combustion chamber. The temperature monitoring device shall have an accuracy of 0.5 percent of the temperature being measured in degrees Fahrenheit.
	B. Verification of	Not applicable
	C. QA/QC Practices and Criteria	Accuracy of the thermocouple will be verified by a second or redundant thermocouple probe inserted into the combustion chamber. The validation check will be conducted at least annually.
	D. Monitoring Frequency	Monitored and recorded once every 15 minutes of operation
	E. Data Collection Procedures	Recorded using a Honeywell digital 2-pen temperature recorder.
	F. Averaging Period	No average is taken

12-XXX-176

ATLAS RESIN PROPPANTS

August 16, 2012

RECEIVED
AUG 17 2012
AIR MANAGEMENT

Operation Permit Team Leader
Bureau of Air Management AM/7
Wisconsin Department of Natural Resources
P.O. Box 7921
Madison, WI 53707-7921

Subject: Atlas Resin Proppants, LLC (FID #627005280)
Application for Expedited Construction Permit & Waiver Request

Dear Sir or Madam:

Atlas Resin Proppants, LLC (Atlas) is hereby submitting two enclosed signed copies of a construction permit application to replace two wet scrubber control devices at its facility located in Taylor, Wisconsin (FID 627005280) with recuperative thermal oxidizers. As indicated on the WDNR Form 4530-100 enclosed in the application, we are requesting an expedited review of this application.

Additionally, in accordance with the provisions of the s. 285.60 (5m), Wis. Stats. and NR 406.03(2). NR 406.03(2), Wis. Adm. Code, we are hereby requesting a waiver to commence construction of the source detailed in the enclosed construction permit application. Discussion supporting this request is presented below.

Enclosed, please find a check for $7,800, which includes the required construction permit application fee ($7,500) and the waiver review fee ($300).

Waiver Request

We believe that the prerequisites for the waiver have been met with this application and that the Wisconsin Department of Natural Resources (WDNR) may grant this waiver for the following reasons:

- A complete construction permit application is enclosed with this request per NR 406.03(2)(b)1.
- The restrictions that would be associated with delaying construction of the new facility until after permit issuance represents an undue hardship per NR 406.03(2)(b)2 for the following reasons:
  - It is necessary for construction to commence by October 1, 2012. Otherwise, the potential for winter weather conditions to delay installation could significantly interfere with production because emission control devices need to be operated at all times that the sand coating lines are operating.
  - The financial costs associated with delays include approximately $26,000 per month in raw materials & disposal costs, approximately $98,000 per month in downtime for scrubber maintenance, and potentially up to $712,000 per month in production loss. The latter estimate pertains a worst-case scenario of running PRC-P resin concurrently in both towers, in which case production would need to be reduced to 2,500 pound batch sizes to maintain ammonia emissions (attributed to the hexa) at levels that are compliant with dispersion modeling established limits for the scrubbers.

P.O. Box 100 • N7532 County Road P • Taylor, WI 54659 • (715) 662-2200 • FAX (715) 662-2424

- The sooner that the construction of the replacement of the wet scrubbers with recuperative thermal oxidizers is able to proceed and ultimately commence operation (after issuance of the construction permit), the sooner that the following benefits are expected to be realized:

  1. Reduction in ongoing maintenance, and associated downtime and operating costs attributed to the use of wet scrubbers;

  2. Reduction in water consumption by eliminating the wet scrubbers, thereby reducing demands for groundwater from the onsite well;

  3. Elimination of chemical usage and onsite storage and handling associated with the scrubbers (*e.g.*, caustic soda);

  4. Reduction in the amount of wastewater generated that is shipped offsite for treatment and disposal, and the associated potential for releases when loading the wastewater into tank trucks;

  5. Reduction in emissions of particulate matter, volatile organic compounds (VOC), and hazardous pollutants, including phenol, ammonia, and formaldehyde; and

  6. Reclassification of the facility from a major source to a synthetic minor source of HAPs.

- Condition I.XXX.1.a.(2)(a) of WDNR Operating Permit No. 627005280-P10 includes daily limits on the amount of the *hexamethylene tetramine* ("hexa") cross-linking agent that can be used on the sand coating operations conducted in Towers A & B. These limits were established via dispersion modeling for ammonia to demonstrate compliance with NR 445, and include different limits per tower as a result of the relative proximity of each tower's exhaust to the property boundary.

  Because the primary resins that are used in the sand coating operations (*i.e.*, novalac [PRC] versus resol [CRC]) require different amounts of hexa to cure, the current daily hexa limits constrain operational flexibility in terms of which and how much of each resin can be used in a particular tower on any given day. The updated dispersion modeling results included in the enclosed application demonstrates that the reduced potential ammonia emissions associated with planned oxidizers result in acceptable ambient air concentrations without the need for daily restrictions on hexa consumption for each tower. The planned wet scrubber replacement will afford needed increased operational flexibility to respond to production demands, while reducing ammonia emissions and associated ambient impacts. Without the replacement of the wet scrubbers, daily production may need to be curtailed when running novalac resins to comply with the current ammonia limits; thereby, limiting our ability to respond to market demands.

- The potential emissions associated with the replacement of the current wet scrubbers with recuperative thermal oxidizers will not require a permit to establish enforceable limitations to avoid NR 405 and/or NR 408 permit requirements.
- The facility is not located within 10 kilometers of a Class I area.

Your time and consideration of this matter are much appreciated. Should you have any questions, please call our environmental consultant, Mr. Joe Liello (TRC Environmental Corp.) at 262-901-2135, or me at 715-662-2200, ext. 231.

Sincerely,

Atlas Resin Proppants, LLC

Erica R Grant

Erica R. Grant
Operations Manager

Enclosures: Air Permit Application documents (two copies)
Check for construction permit application fee & waiver fee review fee

cc: Joe C. Liello, TRC Environmental Corporation

NR 406 and NR 407 Application for Permit to Construct and Operate

Atlas Resin Proppants, LLC

Taylor, Wisconsin

August 2012

150 N. Patrick Blvd, Suite 180, Brookfield, WI 53045-5854, • 262.879.1212 Phone • 262.879.1220 Fax •
www.TRCsolutions.com

Table of Contents

List of Tables

List of Figures

List of Appendices

Section 1
Introduction & Background

1.1 Introduction

Atlas Resin Proppants, LLC (Atlas) has a sand coating facility located at N7530 County Road P in Taylor, Wisconsin. The facility operates under Wisconsin Department of Natural Resources (WDNR) Operating Permit No. 627005280-P10, which was last renewed on January 3, 2012.

In part, this facility has two sand coating lines that are designated as Tower A (Stack S50) and Tower B (Stack S150). Each line includes sand handling operations, and the blending of sand with a phenolic resin and a cross-linking agent in a batch mixer to coat the sand. The resin coated sand is transferred to a continuous mixer that fluidizes the coated sand until it is sufficiently cooled. The cross-linking agent that is used is hexamethylenetetramine (hexa). The primary emissions associated with the sand coating operations include particulate matter, ammonia, which is a decomposition product of the hexa, and volatile organic compounds (VOC), including phenol. Each tower is equipped with a wet scrubber to control the particulate and VOC emissions, including phenol. **At this time, Atlas is planning to replace the wet scrubbers with recuperative thermal oxidizers; however, no changes in production operations are planned in association with this change in control device technology. In part, this change serves to reduce potential federally regulated hazardous air pollutant (HAP) emissions to levels that would allow the facility to be re-classified from a major source to a synthetic minor (area source) of HAPs, while increasing operational flexibility.**

1.2 Background

As noted in the preceding section, Atlas operates a resin-coated sand manufacturing plant in Taylor, Wisconsin, which consists of raw material unloading equipment, two sand coating lines, coating and additives storage, finished product shipping, and emissions control equipment. Each sand coating line generally includes sand handling operations and the blending of sand with a phenolic resin and a cross-linking agent in a batch mixer to coat the sand. The resin-coated sand is then transferred to a continuous mixer to keep the coated sand fluidized until it is sufficiently cooled. The hexa cross-linking agent has a chemical formula of $(CH_2)_6N_4$. The primary emissions that were originally anticipated from this process include particulate matter, VOC, and phenol. Such emissions are controlled by wet scrubbers.

The Wisconsin Department of Natural Resources (WDNR) issued non-major source air construction permit number 05-JAJ-015 on March 30, 2005, for the construction of the first of the two sand

coating lines, which is collectively referred to as "Tower A." The Taylor facility commenced operation in 2006, with the issuance of its synthetic minor operating permit (Permit No. 627005280-F01) on October 10, 2006, which in part, included limits restricting phenol emissions to 9.5 TPY to classify the facility as a synthetic minor source of HAPs and to avoid a case-by-case Maximum Achievable Control Technology (MACT) determination. Construction of a second sand coating line, designated as "Tower B," commenced upon issuance of construction permit number 07-JAJ-042 on April 25, 2007. As a result of the addition of Tower B and its dedicated 9.5 TPY phenol emission limit, the facility-wide potential phenol emissions increased to 19 TPY, thereby exceeding 10 TPY and reclassifying the facility as a major source of HAPs. Consequently, the operating permit was converted from a synthetic minor to a major source permit with the issuance of WDNR Permit No. 627005280-P02 on January 19, 2010.

On April 12, 2010, the WDNR issued Atlas a non-major source construction permit (Permit No. 10-POY-002) for a new resin-coated sand manufacturing facility (similar to the Taylor facility) in Merrillan, Wisconsin. In contrast to the Taylor facility, initial plans for the Merrillan facility called for controlling VOC and phenol emissions via a regenerative thermal oxidizer (RTO). However, after submitting the permit application to the WDNR, it was determined (based on supplier data) that the majority of the nitrogen contained in the hexa is not retained in the sand; rather, the majority is emitted as ammonia - a decomposition product of hexa. The ammonia would be oxidized by the planned RTO, thereby resulting in the emission of nitrogen oxides (NO_x). The estimated maximum theoretical NO_x emissions were well over the 250 TPY major source threshold with respect to Prevention of Significant Deterioration (PSD) permitting requirements. In light of this information, an application was submitted to change from an RTO to wet scrubbers.

In light of this new information, ammonia emissions for the Taylor facility were estimated and it was determined that maximum theoretical ammonia emissions exceeded ch. NR 407, Wis. Adm. Code, inclusion levels and needed to be included in the facility's operation permit as significant. Moreover, based on discussions with Mr. Paul Yeung (WDNR) during the course of the permitting of the Merrillan operations, it was understood that ammonia was expected to be considered as a regulated pollutant with respect to NSR permitting[1]. With this understanding, Atlas requested in the April 2011 NR 407 renewal application that facility-wide ammonia emissions be limited to not more than 237.5 TPY to establish federally enforceable limits to restrict ammonia emissions below the 250 TPY major source threshold under NSR. Additional facility-wide limits were requested for NR 445 compliance demonstration purposes. Such limits were incorporated in WDNR Permit No. 627005280-P10, upon issuance on January 3, 2012.

[1] As discussed later in this application, it has since been determined that ammonia is not a regulated air pollutant with respect to NSR permitting.

Concerns regarding ongoing maintenance and operating costs associated with the use of wet scrubbers to control emissions from the sand coating operations at the Taylor facility, as well as the restrictive nature of certain permit limits on production (*i.e.*, limits established to ensure that phenol emissions for each sand coating line are less than 10 TPY, and that ammonia emissions do not exceed 250 tons per year and/or NR 445 thresholds) have prompted Atlas to reconsider potential oxidizer technologies as an alternative to wet scrubbers for controlling emissions of VOC, including phenol.

As noted above, the historical concern with the use of an RTO lays with the potential oxidation of ammonia to NO_x in quantities that could exceed 250 TPY, thereby triggering PSD permitting requirements. Recuperative thermal oxidizers were historically considered to be technically infeasible out of concerns regarding anticipated impacts of inlet particulate loading, energy efficiency, and the conversion of ammonia to NO_x. Catalytic Products International (CPI) manufactures recuperative thermal oxidizers (Quadrant SR-6,000) that are designed to address many of these concerns. In particular, it utilizes a chain filter and cyclone filtration system to reduce the particulate inlet loading to the oxidizer. Its heat exchanger efficiency is rated at 65 percent, and it uses a center combustion tube paired with a preheat burner to operate at the lowest temperatures while providing high VOC and volatile HAP destruction efficiency (*i.e.*, 99 percent). As for the conversion of nitrogen to NO_x, CPI has stated that the ammonia in the exhaust effectively mimics selective non-catalytic reduction (SNCR) in the combustion chamber, which effectively results in less than 10 percent of the available nitrogen (contained in the ammonia) being converted to NO_x. Moreover, ammonia concentrations at the outlet of the oxidizer are reported to be below detection levels.

In light of such characteristics, Atlas is planning to replace its two existing wet scrubbers with two CPI recuperative thermal oxidizers. No changes in associated production operations are planned. TRC Environmental Corporation (TRC) was retained by Atlas to prepare an application under Chapters NR 406 and NR 407, Wisconsin Administrative Code, to construct and operate two recuperative thermal oxidizers and remove the two existing wet scrubbers. Appendix A of this document contains the appropriate permit application forms. Emission calculations prepared in support of this application are contained in Appendix B.

1.3 Purpose and Scope

This document serves as applications for a Permit to Construct and a Permit to Operate under Chapters NR 406 and NR 407, Wisconsin Administrative Code, for the proposed changing of control devices at Atlas' Taylor facility.

Questions regarding this report may be directed to:

Erica Grant
Operations Manager
Atlas Resin Proppants, LLC
P.O. Box 100
N7530 County Road P
Taylor, WI 54659

Phone: 715.662.2200

or

Joe Liello, P.E., CHMM
Senior Project Manager
TRC Environmental Corp.
150 N. Patrick Blvd., Suite 180
Brookfield, WI 53045-5854

Phone: 262.879.1212

Section 2
Permit Application Summary

Atlas' Taylor facility is planning to remove and replace its currently permitted wet scrubbers, C50 and C150, with two recuperative thermal oxidizers. The new recuperative thermal oxidizer would retain the control device IDs of the existing wet scrubbers. The physical stacks (S50 & S150) associated with the scrubbers will be removed, and each oxidizer will have a new stack – for which the corresponding scrubber stack identification numbers will be applied. In summary, only the control devices are affected by this application and there are no changes to the associated sand-coating operations that they will control.

In a continuing effort to reduce environmental impacts, while sustaining sufficient operational flexibility, the planned control device replacements are intended and expected to:

1. Reduce ongoing maintenance, and associated downtime and operating costs attributed to the use of wet scrubbers;

2. Reduce the water consumption by eliminating the wet scrubbers, thereby reducing demands for groundwater from the onsite well;

3. Eliminate chemical usage and onsite storage and handling associated with the scrubbers (*e.g.*, caustic soda);

4. Reduce the amount of wastewater generated that is shipped offsite for treatment and disposal;

5. Reduce air emissions of particulate matter, VOC, and HAPs, including phenol, ammonia, and formaldehyde (see Table 2-1);

6. Reclassify the facility from a major source to a synthetic minor source of HAPs; and

7. Enhance operational flexibility by requiring enhanced control of select pollutant emissions to levels that would not constrain production - *i.e.*, current limits established to ensure that phenol emissions for each sand coating line are less than 10 TPY, and that ammonia emissions do not exceed 250 tons per year and/or NR 445 thresholds can restrict how much of certain types of resins and hexa are used in each sand coating line.

Table 2-1
Summary of Change in Potential Emissions

Pollutant	Lines	OUTLET - Sand Coating Line Potential to Emit								
		Current Scrubbers			Recuperative TO			Change in Emissions		
		lb/hr	lb/day	TPY	lb/hr	lb/day	TPY	lb/hr	lb/day	TPY
PM	Tower A	1.5	36	6.57	0.71	17	3.13	-0.79	-19	-3.44
	Tower B	1.5	36	6.57	0.71	17	3.13	-0.79	-19	-3.44
	TOTAL	3.00	72	13.14	1.43	34	6.25	-1.57	-38	-6.89
VOC	Tower A	10.6	254	46.43	0.19	5	0.84	-10.41	-250	-45.58
	Tower B	11.0	264	48.18	0.19	5	0.84	-10.81	-259	-47.34
	TOTAL	21.60	518	94.61	0.39	9	1.69	-21.21	-509	-92.92
NOx	Tower A	0.00	0	0.00	24.21	581	106.04	24.21	581	106.04
	Tower B	0.00	0	0.00	24.21	581	106.04	24.21	581	106.04
	TOTAL	0.00	0	0.00	48.42	1,162	212.08	48.42	1,162	212.08
CO	Tower A	0.00	0	0.00	0.50	12	2.21	0.50	12	2.21
	Tower B	0.00	0	0.00	0.50	12	2.21	0.50	12	2.21
	TOTAL	0.00	0	0.00	1.01	24	4.42	1.01	24	4.42
SO2	Tower A	0.00	0	0.00	0.00	0	0.02	0.00	0	0.02
	Tower B	0.00	0	0.00	0.00	0	0.02	0.00	0	0.02
	TOTAL	0.00	0	0.00	0.01	0	0.03	0.01	0	0.03
Phenol	Tower A	2.8	67	9.5	0.19	4	0.82	-2.61	-63	-8.68
	Tower B	3.3	79	9.5	0.19	4	0.82	-3.11	-75	-8.68
	TOTAL	6.10	146	19.00	0.37	9	1.63	-5.73	-137	-17.37
Ammonia	1-line	61.47	1,501		15.93	382	69.76	-45.54	-1,119	
	2-lines	80.38	1,963		15.93	382	69.76	-64.46	-1,581	
	TOTAL	83.60	2,042	237.50	31.86	765	139.53	-51.74	-1,277	-97.97

Inherently, the use of natural gas fired thermal oxidizers will increase natural gas demands and air emissions of combustion byproducts, in particular NO_x. However, based on CPI information regarding the conversion of available nitrogen to NO_x, the estimated potential NO_x emissions from the two oxidizers are expected to be less than 250 TPY. Thus, PSD permitting will be avoided.

Currently, the Taylor facility is considered a major source of HAP emissions and the facility's current permit (WDNR Permit No. 627005280-P10) includes limits that were intended to avoid case-by-case MACT determinations by effectively limiting phenol emissions to less than 10 TPY per line. At a 99 percent destruction efficiency, it is calculated that facility-wide potential phenol emissions will be reduced by greater than 90 percent from the currently permitted 19 TPY to 1.63 TPY, as detailed in Section 3. As a result, the facility can be reclassified as a synthetic minor source of HAPs. To this end, changes in permit Conditions I.E.4.a.(1) and I.J.4.a.(1) are requested, as drafted in Appendix E.

When the current operating permit was renewed in January 2012, it included federally enforceable limits to restrict ammonia emissions to less than 250 TPY based on the understanding that ammonia was viewed to be a regulated pollutant with respect to PSD permitting. It has since been determined that the United States Environmental Protection Agency (USEPA) has formally stated that ammonia is not intended to be considered as a regulated pollutant with respect to PSD, as further discussed in Section 4.1. Consequently, Atlas is requesting that the PSD-avoidance limit for ammonia under Condition I.XXX.1.a.(1) be removed from the permit.

As a result of the reduced ammonia emissions, the dispersion modeling has been updated, which forms the basis for the limits under Condition I.XXX.1.a(2). The updated results demonstrate that ambient concentrations off the property are less than concentrations allowed under column (g) of s. NR 445.07, Wis. Adm. Code; therefore, changes to this condition are requested, as detailed in Appendix E.

Section 3
Recuperative Thermal Oxidizers

3.1 Description

The replacement of two wet scrubbers (C50 & C150) that serve Towers A and B, respectively, with recuperative thermal oxidizers will not entail changes to the associated sand coating operations. However, as summarized in Table 2-1, the change from wet scrubbers to recuperative thermal oxidizers will result in a decrease in emissions of particulate matter, VOC, HAPs, and ammonia, while increasing combustion-based emissions. The basis for the emission estimates are discussed in Section 3.2.

The two identical recuperative thermal oxidizers are manufactured by Catalytic Products International, Inc. (CPI). Key parameters associated with these oxidizers include the following:

- Model: QUADRANT SR-6,000 Recuperative Thermal Oxidizer
- Normal Op. Temp.: 1,450°F
- Max. Op. Temp.: 1,500°F (Design Basis)
- VOC Destruction Eff.: 99 percent (including volatile HAPs)
- Max. Inlet Air Flow: 6,000 SCFM (13,982 ACFM @ 770°F)
- Oxidizer Burner Capacity: 4.5 MMBtu/hr (natural gas fired)
- Duct Heater Capacity: 1.5 MMBtu/hr (natural gas fired)
- Heat Exchanger Eff.: 65 percent

This oxidizer model uses a chain filter and cyclone filtration system to reduce the particulate inlet loading to the oxidizer by greater than 95 percent. Its heat exchanger uses a center combustion tube paired with a preheat burner to operate at the lowest temperatures while providing at least 99 percent destruction efficiency of VOCs, including volatile HAPs. As for the conversion of nitrogen to NO_x, CPI has stated that the ammonia (attributed to decomposition of the hexa) in the exhaust effectively mimics selective non-catalytic reduction (SNCR) in the combustion chamber, which results in less than 10 percent of the available nitrogen being converted to NO_x. Moreover, ammonia concentrations at the outlet of the oxidizer are reported to be below detection levels. Therefore, the majority of the available nitrogen (excluding a minimal amount that is retained in the coated sand) is expected to be converted to and released to the atmosphere as nitrogen gas (N_2).

3.2 Emission Estimates

Inlet loading conditions are based on the resin coated sand formulation and the capacity of the sand coating operations. Information regarding such conditions is used to estimate outlet emissions based on the oxidizer operating parameters discussed in Section 3.1. Although neither the resin coated sand formulation or the capacity of the sand coating operations in Towers A & B are affected by the change from wet scrubbers to recuperative thermal oxidizers, the following presents a brief description of the most current information used to estimate the inlet loading conditions. Key sand coating operating parameters used to establish the maximum inlet loading conditions for each sand coating line are summarized below, which are identical for each of the two lines:

- Max. Batch Size: 3,100 pounds per batch
- Max. No. of Batches per Hour: 12 batches per hour (per line)
- Max. Product Throughput: 37,200 pounds per hour (per line)
- Max. Hexa per Batch: 50 pounds per batch of 30% by wt. hexa solution
- Max. Hexa Throughput: 180 pounds of hexa per hour (per line)

Discussion regarding the sand-coating process emission estimates is presented in Section 3.2.1, while natural gas combustion based emission estimates associated with the oxidizers and duct heaters are discussed in Section 3.2.2. Detailed supporting calculations are provided in Appendix B

3.2.1 Sand-Coating Process Emission Estimates

The hexa ($C_6H_{12}N_4$) molecule is the primary source of nitrogen introduced into the operation, and is comprised of four moles of nitrogen. Based on the above-noted operating parameters, the maximum available nitrogen inlet loading is 71.94 pounds per hour per line, which equates to 87.47 pounds of ammonia per hour per line. As noted in Section 3.1, less than 10 percent of the total available nitrogen at the inlet to each oxidizer is converted to nitrogen oxides (NO_x). This translates to 7.19 pounds of nitrogen per hour per line which, in turn, yields 23.61 pounds of NO_x per hour per line. Based on 8,760 hours per year of operation, this equates to an annualized potential emission rate of approximately 103 TPY per line (excluding NO_x from natural gas combustion).

CPI representatives have noted that stack testing of its recuperative thermal oxidizer on similar operations have not resulted in detectable ammonia concentrations; in such case, they have recommended that a 5 ppm concentration be assumed for NH_3. The balance

of the nitrogen is expected to be as N_2. Based on the supporting calculations provided in Appendix B, a 5 ppm concentration of ammonia yields an estimated hourly ammonia emission rate of only 0.08 pounds per hour per line. In lieu of this estimate, a more conservative emissions rate has been developed for which dispersion modeling (see Appendix C) demonstrates acceptable ambient impacts. Specifically, this hourly emission rate has been multiplied by a factor of 200 to yield a conservative estimate of 15.91 pounds of ammonia per hour per line. It is anticipated that stack-testing will be required, which would be used to refine these estimates for actual emissions and compliance demonstration purposes.

Historical stack testing data for Atlas' Taylor and Merrillan operations has been used to develop emission factors (on a pound of pollutant per pound of product basis) for VOC, phenol, particulate matter, and formaldehyde. Outlet stack testing results are available for each of these pollutants, but inlet loading is only available for VOC and phenol. In the case of each of these pollutants, the maximum stack-test derived emission factor has been used to estimate inlet loading conditions for the oxidizers. A summary of pertinent historical stack test results is provided in Appendix B.

The maximum stack-test derived VOC and phenol emission factors, and the corresponding maximum theoretical[2] inlet and outlet emission rates per line are summarized below (*i.e.*, production-based only, excluding natural gas emissions). The potential emission rates are based on an oxidizer destruction efficiency of 99 percent.

- VOC 4.29E-04 lb/lb-product 15.95 lbs/hr (inlet) 0.16 lbs/hr (outlet)
- Phenol 5.00E-04 lb/lb-product 18.61 lbs/hr (inlet) 0.19 lbs/hr (outlet)

Regarding particulate matter, although CPI has stated that such emissions are expected to be limited to that which is expected from natural gas combustion (See Section 3.2.2), more conservative estimates have been developed based on historical stack sampling. Specifically, the sand coating operations particulate stack testing has been limited to (scrubber) outlet emissions. These results have been used to back-calculate pre-control (inlet) emissions based on the estimated particulate control efficiencies for the respective scrubbers that were tested (in part, based on manufacturer specifications). The maximum resulting pre-control particulate emission factor is 1.80E-04 pounds per pound of product, which conservatively exceeds that which has been used in prior

[2] The stack test results for concurrent inlet stack testing for VOC and phenol at the Merrillan facility in late 2011, indicate that measured phenol emissions were greater than the measured VOC emissions. It is assumed that this may be attributed to a portion of the phenol being emitted as condensable hydrocarbons.

permit applications for Taylor (*i.e.*, 1.73E-04 pounds per pound of product). Based on the maximum throughput rate 37,200 pounds of product per hour per line, the estimated particulate inlet loading is calculated at approximately 6.68 pounds per hour per line. Although CPI's specifications indicate that greater than 95 percent of the particulate matter will be removed, this has been conservatively reduced to 90 percent for the purpose of this application. At this control efficiency, the post-control particulate emission rate is estimated to be 0.67 pounds per hour per line. This rate is less than 45 percent of the current permitted particulate matter emission rate of 1.5 pounds per hour per line. In the absence of particle size distribution information, it is assumed that all of the particulate matter is as PM_{10} and $PM_{2.5}$. In light of this anticipated reduction, it is hereby requested that the allowable particulate emission rates be reduced to this lower calculated emission rate.

Similar to particulate matter, only outlet stack emission rate information is available from historical testing. These results have been used to back-calculate pre-control (inlet) emissions based on the estimated formaldehyde control efficiencies for the respective scrubbers that were tested. As an organic compound, the average VOC removal efficiency derived from inlet and outlet stack testing has been used in this regard. The maximum resulting pre-control formaldehyde emission factor is 4.78E-05 pounds per pound of product. Based on the maximum throughput rate 37,200 pounds of product per hour per line, the estimated particulate inlet loading is calculated at approximately 1.78 pounds per hour per line. Based on a 99 percent oxidizer destruction efficiency, the post-control emission rate is 0.02 pounds per hour per line.

3.2.2 Natural Gas Combustion Emission Estimates

Emissions attributed to the combustion of natural gas by the oxidizer burners and duct heaters have primarily been estimated using emission factors published in Section 1.4 of USEPA's AP-42 (5th edition, July 1998). Carbazole emissions were derived from USEPA's *L&E Air Emissions from Sources of POM* (EPA-454/R-98-014, July 1998), while the ammonia emission factor was obtained from USEPA's FIRE database. Finally, emissions of sulfuric acid mist were estimated based on the assumption that 15 percent of the calculate sulfur dioxide is converted to sulfur trioxide that, in turn, reacts with moisture in the exhaust to form sulfuric acid.

Section 4
Applicable Regulatory Impacts

4.1 Chapter NR 405 – Prevention of Significant Deterioration

Based upon emission calculations conducted by TRC, as summarized in Table 2-1, the emissions from the proposed project are below PSD thresholds, as defined in NR 405, Wis. Adm. Code. Therefore, the conditions specified in this chapter do not apply to the proposed facility.

As discussed in Section 2, when the current operating permit was renewed in January 2012, it included federally enforceable limits to restrict ammonia emissions to less than 250 TPY based on the understanding that ammonia was viewed to be a regulated pollutant with respect to PSD permitting. It has since been determined that USEPA has formally stated that ammonia is not intended to be considered as a regulated pollutant with respect to PSD, based on the following:

- *EPA's Interpretation of Regulations that Determine Pollutants Covered By Federal Prevention of Significant Deterioration (PSD) Permit Program (USEPA Memorandum from Stephen L. Johnson dated December 18, 2008):* In this memo, USEPA states in relation to the regulation of ammonia as a $PM_{2.5}$ precursor under non-attainment area NSR that,

  "…The latter aspect of this interpretation is consistent with one previously adopted by EPA when promulgating its regulations addressing the application of the New Source Review program to and its precursors. 73 Fed. Reg. 28321-28330 (May 16, 2008). That rule provides an option for individual states to regulate ammonia as a $PM_{2.5}$ precursor under the non-attainment NSR program for a particular $PM_{2.5}$ non-attainment area after making a demonstration that ammonia emissions are a significant contributor to that area's ambient $PM_{2.5}$ concentrations. **EPA explained in that rule that if this option were invoked by one state, such an action would not make ammonia subject to the NSR program nationally or in other areas for which this demonstration had not been made.**

- *PSD: Reconsideration of Interpretation of Regulations that Determine Pollutants Covered by the Federal PSD Permit Program (74 Fed. Reg. 51535-51549 (October 7, 2009):* As an extension of the discussion above, within this Federal Register, the following is stated,

  "With regard to PSD, we specifically stated that 'the action of any State identifying ammonia emissions as a significant contributor to a nonattainment area's $PM_{2.5}$ concentrations, or [EPA's] approval of a nonattainment SIP doing so, does not make

ammonia a regulated NSR pollutant for the purposes of PSD' in any areas nationally. See 73 FR 28330 (May 16, 2008).

Based on this information, it is our understanding that ammonia is not regulated as an NSR pollutant for PSD purposes and, therefore, should not be limited in the permit for such purposes. Rather, any limitations on ammonia should be targeted solely to compliance with state only requirements codified under s. NR 445, as discussed under Section 4.6.

4.2 Chapter NR 406 – Construction Permits

There are specific and general categories of exemptions from construction permitting requirements under ch. NR 406. Since none of these exemptions apply to the planned construction activities detailed in this application, the facility is subject to construction permitting requirements under ch. NR 406, Wis. Adm. Code.

4.3 Chapter NR 407 – Operation Permits

The facility is currently classified as a major source of HAPs because at 19 TPY its potential phenol emissions exceed the corresponding major source threshold of 10 TPY for any individual HAP, as defined in s. NR 407.02(4)(a). As detailed in Section 3.2.1 and as summarized in Table 2-1, the recuperative thermal oxidizers will effectively reduce potential phenol emissions to less than 2 TPY. Therefore, it is requested that the facility be reclassified as a synthetic minor source of HAPs.

In addition to HAPs, a major source also includes, but is not limited to, a stationary source that directly emits or has the potential to emit, 100 TPY or more of any air contaminant, including PM_{10} pursuant to s. NR 407.02(4)(b). As indicated by the potential emissions summarized in Table 2-1, each oxidizer will have the potential to emit approximately 103 TPY of NO_x. Therefore, the facility will be regulated as a major source of NO_x under NR 407.

4.4 Chapter NR 415 – Particulate Matter

The proposed project is subject to the applicable particulate emission limits set forth in ch. NR 415. The limit for each sand-coating tower per s. NR 415.05 is the more restrictive of the following:

1. NR 415.05(1)(m): 0.20 pounds of particulate matter per 1,000 pounds of gas. Based on an exhaust flowrate of 13,982 actual cubic feet per minute (ACFM) at 770°F, the estimated air density is 0.032 pounds per cubic foot. Based on this information, the maximum allowable particulate matter emission rate is 5.40 pounds per hour.

2. NR 415.05(2): Limits particulate emissions to below the level indicated by the following equation for processes with throughputs less than 60,000 pounds per hour:

$$E=3.59P^{0.62}$$

where E is the allowable emission rate in pounds per hour and P is the processing rate in tons per hour (TPH). Each of the towers has a maximum processing rate of 37,200 pounds per hour (18.6 TPH). Therefore, the allowable emission rate per tower is 21.99 pounds per hour.

The current allowable particulate matter emission rate for each line is 1.5 pounds per hour, which was determined to demonstrate compliance with ambient air quality standards via dispersion modeling. In lieu of the above-noted limits, Atlas is requesting that the allowable particulate limit for each line be reduced from 1.5 to 0.71 pounds per hour. The lower limit represents that which is expected to be conservatively achievable as a result of the particulate removal provided by the oxidizer and its associated particulate removal systems (chain box and cyclone).

4.5 Chapter NR 428 – Control of Nitrogen Compound Emissions

Because the proposed facility is in Jackson County, only the general limitations found in s. NR 428.03, Wis. Adm. Code apply and the facility will comply with these requirements.

4.6 Chapter NR 445 – State Hazardous Pollutants

Hazardous pollutants regulated under s. NR 445, Wis. Adm. Code from the project include combustion-based emissions and non-combustion based emissions. The combustion emissions are associated with the combustion of Group 1 virgin fossil fuels in the duct heater and burners associated with the oxidizers (C50, C150), which are exempt pursuant to s. NR 445.07(5)(a). The primary non-combustion hazardous pollutants associated with the sand coating operations (P50, P150) are phenol, formaldehyde, and ammonia, which will be vented to the atmosphere via a vertical and unobstructed stack that exhausts 92 feet above the ground. The corresponding potential emission rates are summarized in Table 2-1.

At approximately 0.37 pounds per hour, the combined potential phenol emissions from the two lines will be well below the respective hourly NR 445 table value for stacks greater than or equal to 75 feet is 31.2 pounds per hour. Consequently, the phenol emissions comply with the respective NR 445 table value. See Section 3.1 for additional discussion regarding the basis for the potential phenol emission estimates.

The annualized potential formaldehyde emissions are calculated at 320 pounds per year, which is well below the corresponding 4,712 pound per year NR 445 table value for stacks greater than 75 feet.

For stacks that are at least 75 feet above the ground, the NR 445 table values for ammonia are 28.2 pounds per hour, and an annual rate of 612,587 pounds per year. As discussed in Section 3.2.1, the potential ammonia emissions from each sand coating line has been conservatively estimated at approximately 15.94 pounds per hour (total of 31.88 pounds per hour for both oxidizers, combined). Although the actual emission rate is expected to be significantly below this rate, this rate has been conservatively estimated for permitting purposes. Based on the dispersion modeling results presented in Appendix C, emissions at this rate are acceptable relative to ambient air concentrations, thereby complying with s. NR 445.08(2)(b), Wis. Adm. Code.

4.7 National Emission Standards for Hazardous Air Pollutants

The facility will not emit a federally regulated hazardous air pollutant that is subject to an existing National Emission Standards for Hazardous Air Pollutants (NESHAP) under either 40 CFR 61 or 40 CFR 63. Based on a 99 percent rated destruction efficiency for VOC (including volatile HAPs), the calculated HAP emissions will be less than 10 TPY of any individual HAP and less than 25 TPY of aggregate HAPs. Consequently, the facility is not subject to case-by-case Maximum Achievable Control Technology (MACT) under s. 112(g) of the CAA.

4.8 Environmental Assessment

As indicated in Table 1, the potential NO_x emissions are estimated to be approximately 206 TPY. New sources or modifications or relocations of existing sources that result in a potential for increased emissions of NO_x of 100 TPY or more are considered to be a Type II action. Type II actions require the issue identification, environmental assessment (EA), and decision procedures of the environmental impact statement (EIS) under ss. NR 150.21, 150.22 and 150.24. An EA has been preliminarily prepared and is provided in Appendix D.

4.9 Changes in Permit Conditions

In light of impacts associated with replacing the scrubbers with recuperative thermal oxidizers, select conditions contained in the current WDNR Permit No. 627005280-P10 are requested, as presented in Appendix E.

Currently, the Taylor facility is considered a major source of HAP emissions and the facility's current permit includes limits that were intended to avoid case-by-case MACT determinations by effectively limiting phenol emissions to less than 10 TPY per line. At a 99 percent destruction efficiency, it is calculated that facility-wide potential phenol emissions will be reduced by greater than 90 percent from the currently permitted 19 TPY to 1.63 TPY. As a result, the facility can be reclassified as a synthetic minor source of HAPs. To this end, changes in permit Conditions I.E.4.a.(1) and I.J.4.a.(1) are requested, as proposed in Appendix E.

Atlas is also requesting that the PSD-avoidance limit for ammonia under Condition I.XXX.1.a.(1) be removed from the permit based on the understanding that ammonia is not a PSD regulated air pollutant, as discussed in Section 4.1. Moreover, in light of the reduced ammonia emissions, updated dispersion modeling provided in Appendix C supports revision of Condition I.XXX.1.a(2). Specifically, the updated results demonstrate that ambient concentrations off the property are less than concentrations allowed under column (g) of s. NR 445.07, Wis. Adm. Code. Thereby demonstrating compliance in accordance with Condition I.XXX.1.a(2)(d). Proposed changes to select permit conditions are presented as red-line changes in Appendix E.

STATE LOCATION

0 3000' 6000'

SCALE: 1"=3000'

N

SOURCE: OFFICIAL WEB SITE OF JACKSON COUNTY, WISCONSIN

PLOT DATA
Drawing Name: J:\Atlas Resin Proppants\195338\195338.02.dwg
Operator Name: IAR, JOHN
Drawing Plot Scale: .6663
Dwg Size: 0.20 Mb
Plot Date: August 16, 2'
Plot Time: 3:38 PM
Attached Xrefs:
Attached Images:
Layout: Layout1

TRC
150 North Patrick Blvd.
Suite 180
Brookfield, WI 53045
Phone: 262.879.1212

PROJECT: ATLAS RESIN PROPPANTS TAYLOR, WISCONSIN

SHEET TITLE: SITE LOCATOR MAP

DRAWN BY:	J. KONIAR
APPROVED BY:	
PROJ. NO.	195338.0000.0000
FILE NO.	195338.02.dwg
DATE:	AUGUST 2012

FIGURE 1

ATLAS RESIN PROPPANTS, LLC – Taylor, Wisconsin

Figure 2. Oxidizer Stack Locations (S50 & S150)

Appendix A
Permit Application Forms

12-XXX-176

State of Wisconsin
Department of Natural Resources
dnr.wi.gov

RECEIVED
AUG 17 2012
BUREAU OF AIR MGMT

Facility Identification
Air Pollution Control Permit Application
Form 4530-100 (R 1/11)

Notice: Use of this form is required by the Department for any air pollution control permit application filed pursuant to ss. 285.61, 285.62 or 285.66, Wis. Stats. Completion of this form is mandatory. The Department will not consider or act upon your application unless you complete and submit this application form. You are required to submit two copies in accordance with s. NR 407.05(2), Wis. Adm. Code. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law [ss. 19.31-19.39, Wis. Stats.].

Facility Information

Facility Name	Standard Industrial Class Code (SIC)	Facility ID Number (FID)
Atlas Resin Proppants, LLC	2899	627005280

Street Address (where pollution sources are/will be located)		County
N7530 County Road P	☐ City ☐ Town ☒ Village of Taylor	Jackson

Primary Operating Activity (e.g., lead-acid battery manufacturer or sulfite paper mill)	Is the facility located in an area designated as "nonattainment"?	If yes, indicate the pollutant(s) for the nonattainment designation
Resin-coating sand	☐ Yes ☒ No (refer to instruction booklet)	

Applicant Information

Applicant Name (provide full business or individual's name)
Atlas Resin Proppants, LLC

Mailing Address	City	State	ZIP Code
P.O. Box 100	Taylor	WI	54659

Parent Corporation or Owner Name (if not wholly owned by applicant)

Mailing Address	City	State	ZIP Code	Country (if not U.S.)

Responsible Official Name–person legally responsible for the operation of the permitted air pollution sources [see NR 400.02(80e), Wis. Adm. Code]
Erica Grant

Title	Phone Number
Operations Manager	7156622200

Permit Contact Person – to be contacted for additional information concerning air pollution sources
Joe Liello

Title	Phone Number
Project Manager, TRC Environmental	2629012135

Permit Information

Instructions: If applying for a construction permit (including modification, reconstruction, relocation, and replacement), you MUST also apply for an operation permit, an operation permit renewal, or an operation permit revision. Select 'Operation Permit' if you currently do not have a facility-wide operation permit. Select 'Operation Permit Renewal' if you are renewing your facility-wide operation permit in conjunction with the proposed project. Otherwise, select 'Operation Permit Revision' so that your facility-wide operation permit will be revised to reflect the proposed project.

Permit Type:

☒ Construction Permit

Anticipated construction start date: 10/01/12 (mm/dd/yy) Anticipated operation start date: 10/22/12 (mm/dd/yy)

☒ Initial application fee attached ($7,500)

☐ Construction Permit Exemption and Authority –List appropriate Code citation: _____

☐ Construction Permit Revision – List permit to be revised: _____

☐ Operation Permit Revision – List permit to be revised: _____

☐ Administrative Revision

☐ Minor Revision (must be accompanied by Form 4530-137)

☐ Significant Revision

☐ Operation Permit – select type:

☐ Operation Permit Renewal – select type:

☐ Part 70 Source

☐ Synthetic Minor, Non - Part 70 Source

☐ Non - Part 70 Source

List permit to be renewed: _____

☐ Elective Operation Permit (if requesting an operation permit that is otherwise not required)

☐ Operation Permit Exemption and Authority - List appropriate Code citation: _____

Expedited review fee:

If expedited review requested and fulfilled within the following time periods, the construction permit application fee you will be billed will include a surcharge for this additional service:

☒ 50 days from receipt of completed application for a review not conducted under ch. NR 405 or 408 - $5,000

☐ 60 days from receipt of completed application for a review conducted under ch. NR 405 or 408 - $7,500

☐ 90 days from receipt of completed application for a review conducted under ch. NR 405 or 408 - $4,000

Is additional information attached?
☒ Yes ☐ No

Are two copies of completed form and additional information included?
☒ Yes ☐ No

State of Wisconsin
Department of Natural Resources
APPLICATION

FACILITY PLOT PLAN
AIR POLLUTION CONTROL PERMIT

Form 4530-101 Rev. 12-99

Use of this form is required by the Department for any air pollution control permit application filed pursuant to ss. 285.61, 285.62 or 285.66, Wis Stats. Completion of this form is mandatory. The Department will not consider or act upon your application unless you complete and submit this form. It is not the Department's intention to use any personally identifiable information from this form for any other purpose.

In order for a comprehensive air quality analysis to be accomplished, a facility plot plan MUST be included with the permit application. If the application is for an initial operation permit, submit the elements under #2 below. If the application is for a renewal, answer #1 below first.

1. Have there been changes to the facility plot plan since the previous operation permit application was submitted?

☐ No. The plot plan submitted with the original application can be used for the renewal.
☑ Yes. An up-to-date plot plan is attached. **(Prior information is accurate, and is hereby incorporated by reference, except for locations of new stacks for the recuperative thermal oxidizers – see Figure 2)**

2. If there have been changes to the facility plot plan since the last operation permit application submittal, RESUBMIT an up-to-date plot plan which must include the following or the permit application will be deemed incomplete:

FOR DEPARTMENT USE ONLY

COMPLETE	INCOMPLETE	NOT APPLICABLE	
☐			1. A building layout (blueprint, plan view) including all buildings occupied by or located on the site of the facility.
☐			2. The maximum height of each building (excluding stack height).
☐			3. The location and numerical designation of each stack. Please ensure these designations correspond to the appropriate stacks listed on the other permit forms in this application.
☐			4. The location of fenced property lines (if any).
☐			5. Identify direction "North" on all submittals.
☐			6. All drawings shall be to scale and shall have the scale graphically depicted.
☐			7. An additional regional map depicting the facility location in relation to the surrounding vicinity (roads or other features) shall be included.

Are there any outdoor storage piles on the facility site? ☐ Yes ☑ No

If so, what material does the pile(s) consist of?

Are there any dirt roads or unpaved parking lots on the facility site? ☑ Yes ☐ No

State of Wisconsin
Department of Natural Resources

SOURCE AND SITE DESCRIPTIONS
AIR POLLUTION CONTROL PERMIT APPLICATION
Form 4530-102 Rev. 12-99 Information attached? __(y/n)

se of this form is required by the Department for any air pollution control permit application filed pursuant to ss. 285.61, 285.62 or 285.66, Wis Stats. Completion of this form is mandatory. The Department will not consider or act upon your application unless you complete and submit this form. It is not the Department's intention to use any personally identifiable information from this form for any other purpose.

1. Briefly describe the proposed project or existing Unit(s) to be permitted. Attached supplemental forms as needed.

Atlas Resin Proppants, LLC (Atlas) is proposing to replace the current wet scrubbers (C50 and C150) used at its Taylor facility with recuperative thermal oxidizers. There would be no change to the actual sand-coating processes. See text associated with this permit application for additional details.

For Renewal Applications:
1. Were any new or modified emissions units installed/modified at the facility since the last operation permit issuance date?
- ☐ No. Proceed to form 4530-102A.
- ☐ Yes. Answer the following questions:

2. Briefly describe any new/modified emissions units installed at the facility since the last operation permit issuance date and include the following information. Attach supplemental forms as needed.

a. List the Department issued construction and/or operation permit number as applicable (identifying which units were covered by which permit if multiple permits issued).

i. If operation permit application forms were submitted for the new emission unit(s) covered by the construction permit mentioned above, reference the date of that application.

ii. For Part 70 Sources Only: If no operation permit application forms were submitted for the new emissions unit(s) covered by the construction permit mentioned above, complete the appropriate forms 4530-118 through 4530-125.

b. Include the Department issued construction permit exemption number, if one was assigned, or reference the date of the letter of the exemption.

2. Site Description
The Taylor facility is located at N7530 County Road P in Taylor, Wisconsin. The facility is located in a rural area and is surrounded by agricultural land and forest.

State of Wisconsin
Department of Natural Resources

SOURCE DESCRIPTION - SUPPLEMENTAL
AIR POLLUTION CONTROL PERMIT APPLICATION
Form 4530-102A Rev. 12-99 Information attached? __ (y/n)

Use of this form is required by the Department for any air pollution control permit application filed pursuant to ss. 285.61, 285.62 or 285.66, Wis Stats. Completion of this form is mandatory. The Department will not consider or act upon your application unless you complete and submit this form. It is not the Department's intention to use any personally identifiable information from this form for any other purpose.

1. List all significant existing or proposed air pollution units, operations, and activities at the facility. A short narrative of the inventory of air pollution emissions unit (e.g., boiler, printing line, etc.) followed by equipment specifications will suffice. If the facility consists of several individual emission units, present this information in an outline format. (See instruction booklet for an example Unit description.)

C50/S50 – A Quadrant SR-6,000 Recuperative Thermal Oxidizer
Processes P51, P52 and P53 exhaust through C50/S50

C150/S151 – A Quadrant SR-6,000 Recuperative Thermal Oxidizer
Processes P151, P152 and P153 exhaust through C150/SI50

There is no change to the processes exhausting to C50 and C151.

For Renewal Applications:
1. If there were any new or modified emissions units installed/modified at the facility since the last operation permit issuance date:

a. If any of these new/modified units were exempt from construction permit requirements, but are significant emissions units and operation permit application(s) for the new unit(s) were submitted to the Department reference the date of those submittals.

b. If any of the new/modified units are insignificant emissions units list them on form 4530-102B.

c. If any of the new/modified emissions units do not fit any of the above categories, fill out the appropriate forms for each emissions unit as follows:

i. For Part 70 Sources: Fill out the appropriate forms 4530-103 through 4530-133; OR

ii. For Synthetic Minor Non Part-70 Sources and Non-Part 70 Sources: Fill out the appropriate forms 4530-103 through 4530-117 and 4530-126 through 4530-129.

State of Wisconsin
Department of Natural Resources
APPLICATION

SOURCE DESCRIPTION - SUPPLEMENTAL
AIR POLLUTION CONTROL PERMIT

Form 4530-102B Rev. 12-99 Information attached? __ (y/n)

Use of this form is required by the Department for any air pollution control permit application filed pursuant to ss. 285.61, 285.62 or 285.66, Wis Stats. Completion of this form is mandatory. The Department will not consider or act upon your application unless you complete and submit this form. It is not the Department's intention to use any personally identifiable information from this form for any other purpose.

1. Mark all insignificant existing or proposed air pollution units, operations, and activities at the facility listed below. If not listed, provide a short narrative of the inventory of air pollution emissions unit (e.g., boiler, printing line, etc.) followed by equipment specifications. If the facility consists of several individual emission units, present this information in an outline format. **For Renewal Applications, identify those that are new since the last update to your application.** (See instruction booklet for an example Unit description.)

☐ Maintenance of Grounds, Equipment, and Buildings (lawn care, painting, etc.)

☐ Boiler, Turbine, and HVAC System Maintenance

☐ Pollution Control Equipment Maintenance

☐ Internal Combustion Engines Used for Warehousing and Material Transport

☐ Fire Control Equipment

☐ Janitorial Activities

☐ Office Activities

☐ Convenience Water Heating

☐ Convenience Space Heating (< 5 million BTU/hr Burning Gas, Liquid, or Wood)

☐ Fuel Oil Storage Tanks (< 10,000 gal.)

☐ Stockpiled Contaminated Soils

☐ Demineralization and Oxygen Scavenging of Water for Boilers

☐ Purging of Natural Gas Lines

☐ Sanitary Sewer and Plumbing Venting

☐

☐

☐

☐

☐ **No New Insignificant Emission Units**

☐

☐

State of Wisconsin
Department of Natural Resources

STACK IDENTIFICATION
AIR POLLUTION CONTROL PERMIT APPLICATION
Form 4530-103 11-93

Information attached? __ (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name:	2. Facility identification number:	3. Stack identification number:
Atlas Resin Proppants, LLC	**627005280**	**S50**

4. Exhausting Unit(s), use Unit identification number from appropriate Form(s) 4530-104, 106, 107, 108 and/or 109

4530-104 4530-106 4530-107 4530-108 4530-109

5. Identify this stack on the plot plan required on Form 4530-101

6. Indicate by checking:
☑ This stack has an actual exhaust point. ☐ This stack serves to identify fugitive emissions.

If this stack has an actual exhaust point, then provide the following stack parameters

7. Discharge height above ground level: **92** (feet)

8. Inside dimensions at outlet (check one and complete):

☑ Circular **2.47** (feet) ☐ rectangular ____ length (feet) ____ width (feet)

9. Exhaust flow rate:

Normal **12,817** (ACFM) Maximum **13,982** (ACFM)

10. Exhaust gas temperature (normal): **770** (°F)

11. Exhaust gas moisture content: Normal ____ volume percent Maximum ____ volume percent

12. Exhaust gas discharge direction: ☑ Up ☐ Down ☐ Horizontal

13. Is this stack equipped with a rainhat or any obstruction to the free flow of the exhaust gases from the stack? ☐ Yes ☑ No

***** Complete the appropriate Air Permit Application Forms(s) 4530-104, 106, 107, 108 or 109 for each Unit ***** exhausting through this stack.

State of Wisconsin
Department of Natural Resources

STACK IDENTIFICATION
AIR POLLUTION CONTROL PERMIT APPLICATION
Form 4530-103 11-93

Information attached? __ (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name:	2. Facility identification number:	3. Stack identification number:
Atlas Resin Proppants, LLC	**627005280**	**S150**

4. Exhausting Unit(s), use Unit identification number from appropriate Form(s) 4530-104, 106, 107, 108 and/or 109

4530-104 4530-106 4530-107 4530-108 4530-109

5. Identify this stack on the plot plan required on Form 4530-101

6. Indicate by checking:
☑ This stack has an actual exhaust point. ☐ This stack serves to identify fugitive emissions.

If this stack has an actual exhaust point, then provide the following stack parameters

7. Discharge height above ground level: **92** (feet)

8. Inside dimensions at outlet (check one and complete):

☑ Circular **2.47** (feet) ☐ rectangular ____ length (feet) ____ width (feet)

9. Exhaust flow rate:

Normal **12,817** (ACFM) Maximum **13,982** (ACFM)

10. Exhaust gas temperature (normal): **770** (°F)

11. Exhaust gas moisture content: Normal ____ volume percent Maximum ____ volume percent

12. Exhaust gas discharge direction: ☑ Up ☐ Down ☐ Horizontal

13. Is this stack equipped with a rainhat or any obstruction to the free flow of the exhaust gases from the stack? ☐ Yes ☑ No

***** Complete the appropriate Air Permit Application Forms(s) 4530-104, 106, 107, 108 or 109 for each Unit ***** exhausting through this stack.

State of Wisconsin
Department of Natural Resources

CONTROL EQUIPMENT-CATALYTIC OR THERMAL OXIDATION
AIR POLLUTION CONTROL PERMIT APPLICATION
Form 4530-113 11-93 Information attached? __ (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

ection A

1. Facility name: **Atlas Resin Proppants, LLC**
2. Facility identification number: **627005280**
3. Stack identification number: **S50**
4. Unit identification number: **P51, P52, P53**
5. Control device number: **C50**
6. Manufacturer and model number: **Catalytic Products International, Quadrant SR-6,000**
7. Date of installation: **2012**
8. Describe in detail the oxidation system. Attach a blueprint or diagram of the system. Attached?
Recuperative Thermal Oxidizer. Utilizes a chain filter and cyclone filtration system to reduce particulate inlet loading to the oxidizer. Has a center combustion tube paired with a preheat burner to operate at low temperatures while a 99% VOC and HAP destruction efficiency.

9. List the pollutants to be controlled by this equipment and the expected control efficiency for each pollutant on the table below.
☑ Documentation is attached

Pollutant	Inlet pollutant concentration gr/acf	Inlet pollutant concentration ppmv	Outlet pollutant concentration gr/acf	Outlet pollutant concentration ppmv	Efficiency (%) hood capture	Efficiency (%) pollutant destruction
Particulate Matter						**>95%**
VOC						**99**
HAP						**99**

10. Check one: ☐ Catalytic ☑ Thermal oxidizer (recuperative)
11. Discuss how the spent catalyst will be handled for reuse or disposal.

NA

12. Prepare a malfunction prevention and abatement plan (if required under s. NR 439.11) for this pollution control system. Please include the following:
    a. Identification of the individuals(s), by title, responsible for inspecting, maintaining and repairing this device.
    b. Operation variables such as temperature that will be monitored in order to detect a malfunction or breakthrough, the correct operating range of these variables, and a detailed description of monitoring or surveillance procedures that will be used to show compliance.
    c. An inspection schedule and items or conditions that will be inspected. For catalytic oxidizers, discuss the replacement and/or regeneration schedule for the bed and steps you have taken to ensure the bed's proper functioning throughout its expected lifetime.
    d. A listing of materials and spare parts that will be maintained in inventory.
    e. Is this plan available for review?

Section B

The following questions must be answered by sources installing new equipment or existing Units which cannot document control efficiency of this device by other means. (Catalytic/Thermal dependent on item 10)

Catalytic oxidation	Thermal oxidation
13a. Operating temperature (°F): Max ____ Min	b. Operating temperature (°F): Max 1,500 Min 1,400
14a. Catalyst bed volume (ft^3):	b. Combustion chamber volume (ft^3): TBD
15a. Gas volumetric flow rate at combustion conditions (ACFM):	b. Maximum gas velocity through the device (ft./min): TBD
16a. Type of fuel used:	b. Type of fuel used: natural gas
17a. Maximum fuel use:	b. Maximum fuel used: 0.0045 CF6/hr (excluding duct burner)
18a. Type of catalyst used and volume of catalyst used (ft^3):	
19a. Residence time (seconds):	b. Residence time (seconds): TBD

State of Wisconsin
Department of Natural Resources

CONTROL EQUIPMENT-CATALYTIC OR THERMAL OXIDATION
AIR POLLUTION CONTROL PERMIT APPLICATION
Form 4530-113 11-93 Information attached? __ (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

Section A

1. Facility name: **Atlas Resin Proppants, LLC**
2. Facility identification number: **627005280**
3. Stack identification number: **S150**
4. Unit identification number: **P151, P152, P153**
5. Control device number: **C150**
6. Manufacturer and model number: **Catalytic Products International, Quadrant SR-6,000**
7. Date of installation: **2012**
8. Describe in detail the oxidation system. Attach a blueprint or diagram of the system. Attached?
Recuperative Thermal Oxidizer. Utilizes a chain filter and cyclone filtration system to reduce particulate inlet loading to the oxidizer. Has a center combustion tube paired with a preheat burner to operate at low temperatures while a 99% VOC and HAP destruction efficiency.

9. List the pollutants to be controlled by this equipment and the expected control efficiency for each pollutant on the table below.
☑ Documentation is attached

Pollutant	Inlet pollutant concentration gr/acf	ppmv	Outlet pollutant concentration gr/acf	ppmv	Efficiency (%) hood capture	pollutant destruction
Particulate Matter						**>95%**
VOC						**99**
HAP						**99**

10: Check one: ☐ Catalytic ☑ Thermal oxidizer (recuperative)

11. Discuss how the spent catalyst will be handled for reuse or disposal.

NA

12. Prepare a malfunction prevention and abatement plan (if required under s. NR 439.11) for this pollution control system. Please include the following:
    a. Identification of the individuals(s), by title, responsible for inspecting, maintaining and repairing this device.
    b. Operation variables such as temperature that will be monitored in order to detect a malfunction or breakthrough, the correct operating range of these variables, and a detailed description of monitoring or surveillance procedures that will be used to show compliance.
    c. An inspection schedule and items or conditions that will be inspected. For catalytic oxidizers, discuss the replacement and/or regeneration schedule for the bed and steps you have taken to ensure the bed's proper functioning throughout its expected lifetime.
    d. A listing of materials and spare parts that will be maintained in inventory.
    e. Is this plan available for review?

Section B

The following questions must be answered by sources installing new equipment or existing Units which cannot document control efficiency of this device by other means. (Catalytic/Thermal dependent on item 10)

Catalytic oxidation	Thermal oxidation
13a. Operating temperature (°F): Max ____ Min	b. Operating temperature (°F): Max 1,500 Min 1,400
14a. Catalyst bed volume (ft^3):	b. Combustion chamber volume (ft^3): TBD
15a. Gas volumetric flow rate at combustion conditions (ACFM):	b. Maximum gas velocity through the device (ft./min): TBD
16a. Type of fuel used:	b. Type of fuel used: natural gas
17a. Maximum fuel use:	b. Maximum fuel used: 0.0045 CF6/hr (excluding duct burner)
18a. Type of catalyst used and volume of catalyst used (ft^3):	
19a. Residence time (seconds):	b. Residence time (seconds): TBD

State of Wisconsin
Department of Natural Resources

COMPLIANCE CERTIFICATION - MONITORING AND REPORTING
DESCRIPTION OF METHODS USED FOR DETERMINING COMPLIANCE
Form 4530-118 11-93 Information attached? __ (y/n)

All applicants except non-Part 70 sources are required to certify compliance with all applicable air pollution permit requirements by including a statement within the permit application of the methods used for determining compliance (please see sec. NR 407.05(4)(i), Wis. Adm. Code.) This statement must include a description of the monitoring, recordkeeping, and reporting requirements and test methods. In addition, the application must include a schedule for compliance certification submittals during the permit term. These submittals must be no less frequent than annually, and may need to be more frequent if specified by the underlying applicable requirement or by the Department.

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name **Atlas Resin Proppants, LLC**	2. Facility identification number: **627005280**
3. Stack identification number: **S50**	4. Unit identification number: **P51, P52, P53**

5. This Unit will use the following method(s) for determining compliance with the requirements of the permit (check all that apply and attach the appropriate form(s) to this form).

☐ Continuous Emission Monitoring (CEM) - Form 4530-119
Pollutant(s):

☐ Periodic Emission Monitoring Using Portable Monitors - Form 4530-120
Pollutant(s):

☑ Monitoring Control System Parameters or Operating Parameters of a Process - Form 4530-121
Pollutant(s): **VOC & VOC-HAP**

☐ Monitoring Maintenance Procedures - Form 4530-122
Pollutant(s):

☐ Stack Testing - Form 4530-123
Pollutant(s):

☐ Fuel Sampling and Analysis (FSA) - Form 4530-124
Pollutant(s):

☐ Recordkeeping - Form 4530-125
Pollutant(s):

☐ Other (please describe) - Form 4530-135
Pollutant(s):

6. Compliance certification reports will be submitted to the Department according to the following schedule:

Start date: **Within 45 days after the end of each reporting period (Jan. 1 –Dec. 31)**
and every 12 months thereafter.

Compliance monitoring reports will be submitted to the Department according to the following schedule:

Start date: **Within 45 days after the end of each reporting period (Jan. 1 – Jun. 30; Jul. 1 – Dec. 31)**
and every 6 months thereafter.

State of Wisconsin
Department of Natural Resources

COMPLIANCE CERTIFICATION - MONITORING AND REPORTING
DESCRIPTION OF METHODS USED FOR DETERMINING COMPLIANCE
Form 4530-118 11-93 Information attached? __ (y/n)

All applicants except non-Part 70 sources are required to certify compliance with all applicable air pollution permit requirements by including a statement within the permit application of the methods used for determining compliance (please see sec. NR 407.05(4)(i), Wis. Adm. Code.) This statement must include a description of the monitoring, recordkeeping, and reporting requirements and test methods. In addition, the application must include a schedule for compliance certification submittals during the permit term. These submittals must be no less frequent than annually, and may need to be more frequent if specified by the underlying applicable requirement or by the Department.

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name **Atlas Resin Proppants, LLC**	2. Facility identification number: **627005280**
3. Stack identification number: **S150**	4. Unit identification number: **P151, P152, P153**

5. This Unit will use the following method(s) for determining compliance with the requirements of the permit (check all that apply and attach the appropriate form(s) to this form).

☐ Continuous Emission Monitoring (CEM) - Form 4530-119
Pollutant(s):

☐ Periodic Emission Monitoring Using Portable Monitors - Form 4530-120
Pollutant(s):

☑ Monitoring Control System Parameters or Operating Parameters of a Process - Form 4530-121
Pollutant(s): **VOC & VOC-HAP**

☐ Monitoring Maintenance Procedures - Form 4530-122
Pollutant(s):

☐ Stack Testing - Form 4530-123
Pollutant(s):

☐ Fuel Sampling and Analysis (FSA) - Form 4530-124
Pollutant(s):

☐ Recordkeeping - Form 4530-125
Pollutant(s):

☐ Other (please describe) - Form 4530-135
Pollutant(s):

6. Compliance certification reports will be submitted to the Department according to the following schedule:

Start date: **Within 45 days after the end of each reporting period (Jan. 1 –Dec. 31)**
and every **12** months thereafter.

Compliance monitoring reports will be submitted to the Department according to the following schedule:

Start date: **Within 45 days after the end of each reporting period (Jan. 1 – Jun. 30; Jul. 1 – Dec. 31)**
and every **6** months thereafter.

State of Wisconsin
Department of Natural Resources

COMPLIANCE DEMONSTRATION BY MONITORING CONTROL SYSTEM PARAMETERS OR OPERATING PARAMETERS OF A PROCESS AIR POLLUTION CONTROL PERMIT APPLICATION

Form 4530-121 11-93

Information attached? __ (y/n)

The monitoring of a control system parameter or a process may be acceptable as a compliance demonstration method provided that a correlation between the parameter value and the emission rate of a particular pollutant is established in the form of a curve of emission rate versus parameter values. Ideally three sets of stack test data, that bracket the emission limit if possible, could be used to define the emission curve. This correlation shall constitute the certification of the system. It should be attached for Department approval. If it is not attached, please submit it within 60 days of the startup of the system.

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name: : **Atlas Resin Proppants**	2. Facility identification number: **627005280**
3. Stack identification number: **S50**	4. Unit identification number: **P51, P52, P53**
5. Pollutant(s) being monitored: **VOC & VOC-HAP**	
6. Name of manufacturer: **Catalytic Products International**	7. Model number: **Quadrant SR-6,000 Recuperative TO**
8. Is this an existing system? ☐ Yes ☑ No	9. Installation date: **2012**

10. Method of monitoring description:
Monitor the combustion chamber temperature.

11. Backup system: **None**

12. Indicate by checking: **Malfunction Prevention & Abatement Plan will be updated to include this source**

The monitoring system shall be subject to appropriate performance specifications, calibration requirements and quality assurance procedures. ☐ A quality assurance/quality control plan for the monitoring system is attached for Department approval. ☐ If the plan is not attached, please submit it within 60 days of the start-up of the monitoring program. ☐ The plan was submitted to the Department on _____.

13. The applicant shall propose an appropriate averaging period, (i.e., a particular number of continuous hours) for the purpose of defining excess emissions. The Department may approve the proposed averaging period, or other period which the Department determines to be appropriate. Provide the proposed averaging period(s) below.

Parameter	Averaging Period
Combustion Chamber Temperature	**Monitor & Record every 15-minutes**

State of Wisconsin
Department of Natural Resources

COMPLIANCE DEMONSTRATION BY MONITORING CONTROL SYSTEM PARAMETERS OR OPERATING PARAMETERS OF A PROCESS AIR POLLUTION CONTROL PERMIT APPLICATION

Form 4530-121 11-93

Information attached? __ (y/n)

The monitoring of a control system parameter or a process may be acceptable as a compliance demonstration method provided that a correlation between the parameter value and the emission rate of a particular pollutant is established in the form of a curve of emission rate versus parameter values. Ideally three sets of stack test data, that bracket the emission limit if possible, could be used to define the emission curve. This correlation shall constitute the certification of the system. It should be attached for Department approval. If it is not attached, please submit it within 60 days of the startup of the system.

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name: : **Atlas Resin Proppants**	2. Facility identification number: **627005280**
3. Stack identification number: **S150**	4. Unit identification number: **P151, P152, P153**
5. Pollutant(s) being monitored: **VOC & VOC-HAP**	
6. Name of manufacturer: **Catalytic Products International**	7. Model number: **Quadrant SR-6,000 Recuperative TO**
8. Is this an existing system? ☐ Yes ☑ No	9. Installation date: **2012**

10. Method of monitoring description:
Monitor the combustion chamber temperature.

11. Backup system: **None**

12. Indicate by checking: **Malfunction Prevention & Abatement Plan will be updated to include this source**

The monitoring system shall be subject to appropriate performance specifications, calibration requirements and quality assurance procedures. ☐ A quality assurance/quality control plan for the monitoring system is attached for Department approval. ☐ If the plan is not attached, please submit it within 60 days of the start-up of the monitoring program. ☐ The plan was submitted to the Department on _____.

13. The applicant shall propose an appropriate averaging period, (i.e., a particular number of continuous hours) for the purpose of defining excess emissions. The Department may approve the proposed averaging period, or other period which the Department determines to be appropriate. Provide the proposed averaging period(s) below.

Parameter	Averaging Period
Combustion Chamber Temperature	**Monitor & Record every 15-minutes**

State of Wisconsin
Department of Natural Resources

EMISSION UNIT HAZARDOUS AIR POLLUTANT SUMMARY
AIR POLLUTION CONTROL PERMIT APPLICATION
Form 4530-126 11-93

Information attached? _ (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name: **Atlas Resin Proppants, LLC**	2. Facility identification number: **627005280**
3. Stack identification number: **S50**	4. Unit identification number: **P51, P52, P53**

5. Unit material description: **Natural Gas**

6. Complete the following summary of hazardous air emissions from this unit. Attach sample calculations and emission factor references. Attached? **Yes**

Pollutant CAS	Actual emissions		Maximum theoretical emissions		Potential to emit	
		Units		Units		
See Appendix B						TPY
						TPY
						TPY
						TPY
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State of Wisconsin
Department of Natural Resources

EMISSION UNIT HAZARDOUS AIR POLLUTANT SUMMARY
AIR POLLUTION CONTROL PERMIT APPLICATION
Form 4530-126 11-93

Information attached? _ (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name: **Atlas Resin Proppants, LLC**	2. Facility identification number: **627005280**
3. Stack identification number: **S150**	4. Unit identification number: **P151, P152, P153**

5. Unit material description: **Natural Gas**

6. Complete the following summary of hazardous air emissions from this unit. Attach sample calculations and emission factor references. Attached? __Yes__

Pollutant CAS	Actual emissions		Maximum theoretical emissions		Potential to emit	
		Units		Units		
See Appendix B						TPY
						TPY
						TPY
						TPY
						TPY
						TPY
						TPY
						TPY
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						TPY
						TPY
						TPY

State of Wisconsin
Department of Natural Resources

EMISSION UNIT SUMMARY
AIR POLLUTION CONTROL PERMIT APPLICATION
Form 4530-128 11-93

Information attached? _ (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name: **Atlas Resin Proppants, LLC**	2. Facility identification number: **627005280**
3. Stack identification number: **S51**	4. Unit identification number: **P51, P52, P53**

5. Complete the following emissions summary for the following pollutants. Attach sample calculations and emission factor references. Attached? **Yes**

Air pollutant	Actual			Maximum theoretical emissions			Potential to emit		Maximum allowable		
		U	TPY		U	TPY				U	TPY
PM/PM10/PM2.5	0.55	1	2.34	6.73	1	29.46	3.13	TPY	0.71	1	3.13
Sulfur dioxide	0.004	1	0.01	0.004	1	0.02	0.02	TPY	0.004	1	0.02
Organic compounds	0.15	1	0.63	15.99	1	70.02	0.84	TPY	0.19	1	0.84
Carbon monoxide	0.50	1	1.66	0.50	1	2.21	2.21	TPY	0.50	1	2.21
Lead	3E-06	1	10E-06	3E-06	1	1.3E-06	1.3E-06	TPY	3E-06	1	1.3E-06
Nitrogen oxides	18.31	1	79.53	24.21	1	106.04	106.04	TPY	24.21	1	106.04
Total reduced sulfur								TPY			
Mercury								TPY			
Asbestos								TPY			
Beryllium								TPY			
Vinyl chloride								TPY			
CO2	720	1	2,365	720	1	3,154	3,154	TPY	720	1	3,154
								TPY			
								TPY			
								TPY			
								TPY			

Units (U) should be entered as follows:

1 = lb/hr
2 = lb/mmBTU
3 = grains/dscf
4 = lb/ gallon
5 = ppmdv
6 = other (specify)
7 = other (specify)
8 = other (specify)

State of Wisconsin
Department of Natural Resources

EMISSION UNIT SUMMARY
AIR POLLUTION CONTROL PERMIT APPLICATION
Form 4530-128 11-93

Information attached? _ (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name: **Atlas Resin Proppants, LLC**	2. Facility identification number: **627005280**
3. Stack identification number: **S151**	4. Unit identification number: **P151, P152, P153**

5. Complete the following emissions summary for the following pollutants. Attach sample calculations and emission factor references. Attached? **Yes**

Air pollutant	Actual			Maximum theoretical emissions			Potential to emit		Maximum allowable		
		U	TPY		U	TPY				U	TPY
PM/PM10/PM2.5	0.55	1	2.34	6.73	1	29.46	3.13	TPY	0.71	1	3.13
Sulfur dioxide	0.004	1	0.01	0.004	1	0.02	0.02	TPY	0.004	1	0.02
Organic compounds	0.15	1	0.63	15.99	1	70.02	0.84	TPY	0.19	1	0.84
Carbon monoxide	0.50	1	1.66	0.50	1	2.21	2.21	TPY	0.50	1	2.21
Lead	3E-06	1	10E-06	3E-06	1	1.3E-06	1.3E-06	TPY	3E-06	1	1.3E-06
Nitrogen oxides	18.31	1	79.53	24.21	1	106.04	106.04	TPY	24.21	1	106.04
Total reduced sulfur								TPY			
Mercury								TPY			
Asbestos								TPY			
Beryllium								TPY			
Vinyl chloride								TPY			
CO2	720	1	2,365	720	1	3,154	3,154	TPY	720	1	3,154
								TPY			
								TPY			
								TPY			
								TPY			

Units (U) should be entered as follows:

1 = lb/hr
2 = lb/mmBTU
3 = grains/dscf
4 = lb/ gallon
5 = ppmdv
6 = other (specify)
7 = other (specify)
8 = other (specify)

State of Wisconsin
Department of Natural Resources

CURRENT EMISSIONS REQUIREMENTS AND STATUS OF UNIT AIR POLLUTION CONTROL PERMIT APPLICATION

Form 4530-130 Rev. 12-99 Information attached? __ (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name: **Atlas Resin Proppants, LLC**	2. Facility identification number: **627005280**
3. Stack identification number: **S50**	4. Unit identification number: **P51, P52, P53**

5. Pollutant	6. Wis. Adm. Code Wis. Stats., 40 CFR	7. State Only	8. Limitation	9. Compliance Status (in or out)
Particulate Matter	**WDNR Permit No. 627005280-P10, Condition I.E.1**		**Request changes: Decrease limit from 1.5 to 0.71 lbs/hr; increase stack height to 92 feet & diameter to 2.47'**	**IN**
Visible Emissions	**WDNR Permit No. 627005280-P10, Condition I.E.2**		**20% Opacity**	**IN**
Volatile Organic Compounds	**WDNR Permit No. 627005280-P10, Condition I.E.3**		**Overall control of 99% or 0.19 lb/hr**	**IN**
Phenol Emissions	**WDNR Permit No. 627005280-P10, Condition I.E.4**		**Overall control of 99% or 0.19 lb/hr**	**IN**
Ammonia	**WDNR Permit No. 627005280-P10, Condition I.XXX.1**	**X**	**Eliminate Condition I.XXX.1.a.(1); Use of modeling (App. C) to demonstrate compliance with s. NR 445.08(2)(e)**	**IN**

10. Other requirements (e.g., malfunction reporting, special operating conditions from an existing permit, etc.)	State Only	Compliance Status (in or out)
NR 439 Reporting and Recordkeeping		**IN**
NR 445.07 Hazardous Pollutants	**X**	**IN**

**** PART 70 SOURCES ONLY:**

1. **Be sure to review the Compliance Assurance Monitoring (CAM) Rule, 40 CFR Part 64, for the Renewal Application.** The CAM rule requires owners and operators of Part 70 sources to monitor the operation and maintenance of their control equipment so that they can evaluate the performance of their control devices and report whether or not their facilities meet established emission standards. All facilities that have a Title V, Part 70, Federal Operating Permit are required to meet the CAM rule and **submit a CAM plan with this Title V renewal application.** The rule requires that a CAM plan be submitted with the Title V renewal application for each pollutant at **each emissions unit** which has a potential to emit - prior to controls - of that pollutant greater than the major source threshold for the respective pollutant. Please refer to the CAM Technical Guidance web site at http://www.epa.gov/ttn/emc/cam.html for further documentation on the rule and how to prepare a CAM plan for submittal with the renewal application.

2. List all applicable **Maximum Achievable Control Technology** (MACT) rule(s) and the effective date(s) if they were promulgated during the last 3 years of your operation permit term. Identify the emissions units subject to each MACT rule listed.

State of Wisconsin
Department of Natural Resources

CURRENT EMISSIONS REQUIREMENTS AND STATUS OF UNIT
AIR POLLUTION CONTROL PERMIT APPLICATION

Form 4530-130 Rev. 12-99 Information attached? _ (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name: **Atlas Resin Proppants, LLC**	2. Facility identification number: **627005280**
3. Stack identification number: **S150**	4. Unit identification number: **P151, P152, P153**

5. Pollutant	6. Wis. Adm. Code Wis. Stats., 40 CFR	7. State Only	8. Limitation	9. Compliance Status (in or out)
Particulate Matter	**WDNR Permit No. 627005280-P10, Condition I.E.1**		**Request changes: Decrease limit from 1.5 to 0.71 lbs/hr; increase stack height to 92 feet & diameter to 2.47'**	**IN**
Visible Emissions	**WDNR Permit No. 627005280-P10, Condition I.E.2**		**20% Opacity**	**IN**
Volatile Organic Compounds	**WDNR Permit No. 627005280-P10, Condition I.E.3**		**Overall control of 99% or 0.19 lb/hr**	**IN**
Phenol Emissions	**WDNR Permit No. 627005280-P10, Condition I.E.4**		**Overall control of 99% or 0.19 lb/hr**	**IN**
Ammonia	**WDNR Permit No. 627005280-P10, Condition I.XXX.1**	**X**	**Eliminate Condition I.XXX.1.a.(1); Use of modeling (App. C) to demonstrate compliance with s. NR 445.08(2)(e)**	**IN**

10. Other requirements (e.g., malfunction reporting, special operating conditions from an existing permit, etc.)	State Only	Compliance Status (in or out)
NR 439 Reporting and Recordkeeping		**IN**
NR 445.07 Hazardous Pollutants	**X**	**IN**

**** PART 70 SOURCES ONLY:**

1. **Be sure to review the Compliance Assurance Monitoring (CAM) Rule, 40 CFR Part 64, for the Renewal Application.** The CAM rule requires owners and operators of Part 70 sources to monitor the operation and maintenance of their control equipment so that they can evaluate the performance of their control devices and report whether or not their facilities meet established emission standards. All facilities that have a Title V, Part 70, Federal Operating Permit are required to meet the CAM rule and **submit a CAM plan with this Title V renewal application.** The rule requires that a CAM plan be submitted with the Title V renewal application for each pollutant at **each emissions unit** which has a potential to emit - prior to controls - of that pollutant greater than the major source threshold for the respective pollutant. Please refer to the CAM Technical Guidance web site at http://www.epa.gov/ttn/emc/cam.html for further documentation on the rule and how to prepare a CAM plan for submittal with the renewal application.

2. List all applicable **Maximum Achievable Control Technology** (MACT) rule(s) and the effective date(s) if they were promulgated during the last 3 years of your operation permit term. Identify the emissions units subject to each MACT rule listed.

State of Wisconsin
Department of Natural Resources

EMISSION UNIT COMPLIANCE PLAN
COMMITMENTS AND SCHEDULE
AIR POLLUTION CONTROL PERMIT APPLICATION
Form 4530-131 11-93 Information attached? (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name: **Atlas Resin Proppants, LLC**	2. Facility identification number: **627005280**
3. Stack identification number: **S50**	4. Unit identification number: **P51, P52, P53**

5. For Units that are presently in compliance with all applicable requirements, including any enhanced monitoring and compliance certification requirements under section 114(a)(3) of the Clean Air Act that apply, complete the following. These commitments are part of the application for Part 70 permits.

☒ We will continue to operate and maintain this Unit in compliance with all applicable requirements.

☒ Form 4530-130 includes new requirements that apply or will apply to this Unit during the term of the permit. We will meet such requirements on a timely basis.

6. For Units not presently fully in compliance, complete the following.

☐ This Unit is in compliance with all applicable requirements except for those indicated below. We will achieve compliance according to the following schedule:

Applicable Requirement	Corrective Actions	Deadline
1.NR 407.04, WAC,		
2.		
3.		
Progress reports will be submitted: Start date: _____ and every six (6) months thereafter		

State of Wisconsin
Department of Natural Resources

EMISSION UNIT COMPLIANCE PLAN
COMMITMENTS AND SCHEDULE
AIR POLLUTION CONTROL PERMIT APPLICATION
Form 4530-131 11-93 Information attached? (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name: **Atlas Resin Proppants, LLC**	2. Facility identification number: **627005280**
3. Stack identification number: **S150**	4. Unit identification number: **P151, P152, P153**

5. For Units that are presently in compliance with all applicable requirements, including any enhanced monitoring and compliance certification requirements under section 114(a)(3) of the Clean Air Act that apply, complete the following. These commitments are part of the application for Part 70 permits.

☒ We will continue to operate and maintain this Unit in compliance with all applicable requirements.

☒ Form 4530-130 includes new requirements that apply or will apply to this Unit during the term of the permit. We will meet such requirements on a timely basis.

6. For Units not presently fully in compliance, complete the following.

☐ This Unit is in compliance with all applicable requirements except for those indicated below. We will achieve compliance according to the following schedule:

Applicable Requirement	Corrective Actions	Deadline
1.NR 407.04, WAC,		
2.		
3.		
Progress reports will be submitted: Start date: _____ and every six (6) months thereafter		

State of Wisconsin
Department of Natural Resources

INDEX OF AIR POLLUTION PERMIT APPLICATION FORMS
Form 4530-134 Rev. 12-99

I. ADMINISTRATION	
This application contains the following forms:	☑Form 4530-100, Facility Identification
	☑Form 4530-101, Facility Plot Plan
	☑Forms 4530-102, -102A, and -102B, Source and Site Descriptions

II. EMISSIONS SOURCE DESCRIPTION		Total Number of This Form
This application contains the following forms (one form for each facility boiler, printing operation, etc.):	☑Form 4530-103, Stack Identification	2
	☐Form 4530-104, Boiler or Furnace Operation	
	☐Form 4530-105, Storage Tanks	
	☐Form 4530-106, Incineration	
	☐Form 4530-107, Printing Operations	
	☐Form 4530-108, Painting and Coating Operations	
	☐Form 4530-109, Miscellaneous Processes	

III. AIR POLLUTION CONTROL SYSTEM		Total Number of This Form
This application contains the following forms:	☐Form 4530-110, Miscellaneous	
	☐Form 4530-111, Condensers	
	☐Form 4530-112, Adsorbers	
	☑Form 4530-113, Catalytic or Thermal Oxidation	2
	☐Form 4530-114, Cyclones/Settling Chambers	
	☐Form 4530-115, Electrostatic Precipitators	
	☐Form 4530-116, Wet Collection Systems	
	☐Form 4530-117, Baghouses/Fabric Filters	

IV. COMPLIANCE DEMONSTRATION		Total Number of This Form
This application contains the following forms (one for each facility boiler, printing operation, etc.):	☑Form 4530-118, Compliance Certification - Monitoring and Reporting	2
	☐Form 4530-119, Continuous Emission Monitoring	
	☐Form 4530-120, Periodic Emission Monitoring Using Portable Monitors	
	☑Form 4530-121, Control System Parameters or Operation Parameters of a Process	2
	☐Form 4530-122, Monitoring Maintenance Procedures	
	☐Form 4530-123, Stack Testing	
	☐Form 4530-124, Fuel Sampling and Analysis	
	☐Form 4530-125, Recordkeeping	

V.EMISSION SUMMARY AND COMPLIANCE CERTIFICATION		Total Number of This Form
This application contains the following forms quantifying emissions, certifying compliance with applicable requirements, and developing a compliance plan	☑Form 4530-126, Emission Unit Hazardous Air Pollutant Summary	2
	☐Form 4530-127, Facility Hazardous Air Pollutant Summary	
	☑Form 4530-128, Emission Unit Summary	2
	☐Form 4530-129, Facility Emissions Summary	
	☑Form 4530-130, Current Emissions Requirements and Status of Unit	2
	☑Form 4530-131, Emission Unit Compliance Plan - Commitments and Schedule	2
	☐Form 4530-132, Current Emissions Requirements and Status of Facility	
	☐Form 4530-133, Facility Requirement Compliance Plan Commitments and Schedule	

VI.SIGNATURE OF RESPONSIBLE OFFICIAL

A.STATEMENT OF COMPLETENESS

I have reviewed this application in its entirety and, based on information and belief formed after reasonable inquiry, I certify that the statements and information contained in this application are true, accurate and complete.

B.FOR RENEWALS ONLY

I have reviewed this application, the original operation permit application dated _____, and operation permit number _____ in their entirety and, based on information and belief formed after reasonable inquiry, I certify that the statements and information contained in this renewal application are true, accurate and complete.

C.CERTIFICATION OF FACILITY COMPLIANCE STATUS (check one box only)
THIS IS NOT A REQUIREMENT OF NON-PART 70 SOURCES.

☑I certify that the facility described in this air pollution permit application is fully in compliance with all applicable requirements.

☐I certify that the facility described in this air pollution permit application is fully in compliance with all applicable requirements, except for the following emissions unit(s):

_____ .
(list all non-complying units)

Printed or Typed Name	Title
Erica Grant	**Operations Manager**
Signature Erica Grant	Date Signed 8/15/12

SEND ALL MATERIALS TO:

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
BUREAU OF AIR MANAGEMENT
OPERATION PERMIT TEAM LEADER
P.O. BOX 7921
MADISON, WI 53707-7921

Appendix B
Emission Calculations

ATLAS RESIN PROPPANTS, LLC - Taylor

Facility-wide Summary of Emissions
Maximum Theoretical Emissions

Pollutant	CAS No.	Fed. HAP	Taylor						TOTAL	
			Tower A (S50)			Tower B (S150)				
			lb/hr	lb/yr	TPY	lb/hr	lb/yr	TPY	lb/hr	TPY
Criteria Air Pollutants										
PM			6.73	58,911.68	29.46	6.73	58,911.68	29.46	13.45	58.91
PM10			6.73	58,911.68	29.46	6.73	58,911.68	29.46	13.45	58.91
PM2.5			6.73	58,911.68	29.46	6.73	58,911.68	29.46	13.45	58.91
CO			0.50	4,415.04	2.21	0.50	4,415.04	2.21	1.01	4.42
CO2	124-38-9		720.00	6,307,200.00	3,153.60	720.00	6,307,200.00	3,153.60	1,440.00	6,307.20
NOx			24.21	212,078.34	106.04	24.21	212,078.34	106.04	48.42	212.08
SO2			0.0036	31.54	0.02	0.0036	31.54	0.02	0.01	0.03
VOC			15.99	140,044.18	70.02	15.99	140,044.18	70.02	31.97	140.04
Hazardous Pollutants										
2-Methylnaphthalene	91-57-6		1.44E-07	1.26E-03	6.31E-07	1.44E-07	1.26E-03	6.31E-07	2.88E-07	1.26E-06
3-Methylchloranthrene	56-49-5		1.08E-08	9.46E-05	4.73E-08	1.08E-08	9.46E-05	4.73E-08	2.16E-08	9.46E-08
7,12-Dimethylbenz(a)anthracene	57-97-6		9.60E-08	8.41E-04	4.20E-07	9.60E-08	8.41E-04	4.20E-07	1.92E-07	8.41E-07
Acenaphthene	83-32-9		1.08E-08	9.46E-05	4.73E-08	1.08E-08	9.46E-05	4.73E-08	2.16E-08	9.46E-08
Acenaphthylene	203-96-8		1.08E-08	9.46E-05	4.73E-08	1.08E-08	9.46E-05	4.73E-08	2.16E-08	9.46E-08
Ammonia	7664-41-7		8.75E+01	7.66E+05	3.83E+02	8.75E+01	7.66E+05	3.83E+02	1.75E+02	7.66E+02
Anthracene	120-12-7		1.44E-08	1.26E-04	6.31E-08	1.44E-08	1.26E-04	6.31E-08	2.88E-08	1.26E-07
Arsenic	7440-38-2	x	1.20E-06	1.05E-02	5.26E-06	1.20E-06	1.05E-02	5.26E-06	2.40E-06	1.05E-05
Barium	7440-39-3		2.64E-05	2.31E-01	1.16E-04	2.64E-05	2.31E-01	1.16E-04	5.28E-05	2.31E-04
Benz(a)anthracene	56-55-3		1.08E-08	9.46E-05	4.73E-08	1.08E-08	9.46E-05	4.73E-08	2.16E-08	9.46E-08
Benzene	71-43-2	x	1.26E-05	1.10E-01	5.52E-05	1.26E-05	1.10E-01	5.52E-05	2.52E-05	1.10E-04
Benzo(a)anthracene	56-55-3		1.08E-08	9.46E-05	4.73E-08	1.08E-08	9.46E-05	4.73E-08	2.16E-08	9.46E-08
Benzo(a)pyrene	50-32-8		7.20E-09	6.31E-05	3.15E-08	7.20E-09	6.31E-05	3.15E-08	1.44E-08	6.31E-08
Benzo(b)fluoranthene	205-99-2		1.08E-08	9.46E-05	4.73E-08	1.08E-08	9.46E-05	4.73E-08	2.16E-08	9.46E-08
Benzo(g,h,i)perylene	191-24-2		7.20E-09	6.31E-05	3.15E-08	7.20E-09	6.31E-05	3.15E-08	1.44E-08	6.31E-08
Benzo(k)fluoranthene	205-82-3		1.08E-08	9.46E-05	4.73E-08	1.08E-08	9.46E-05	4.73E-08	2.16E-08	9.46E-08
Beryllium	7440-41-7	x	7.20E-08	6.31E-04	3.15E-07	7.20E-08	6.31E-04	3.15E-07	1.44E-07	6.31E-07
Cadmium	7440-43-9	x	6.60E-06	5.78E-02	2.89E-05	6.60E-06	5.78E-02	2.89E-05	1.32E-05	5.78E-05
Carbazole	86-74-8		4.64E-10	4.07E-06	2.03E-09	4.64E-10	4.07E-06	2.03E-09	9.29E-10	4.07E-09
Chromium	7440-47-3	x	8.40E-06	7.36E-02	3.68E-05	8.40E-06	7.36E-02	3.68E-05	1.68E-05	7.36E-05
Chrysene	218-01-9		1.08E-08	9.46E-05	4.73E-08	1.08E-08	9.46E-05	4.73E-08	2.16E-08	9.46E-08
Cobalt	7440-48-4	x	5.04E-07	4.42E-03	2.21E-06	5.04E-07	4.42E-03	2.21E-06	1.01E-06	4.42E-06
Copper	7440-50-8		5.10E-06	4.47E-02	2.23E-05	5.10E-06	4.47E-02	2.23E-05	1.02E-05	4.47E-05
Dibenz(a,h)anthracene	53-70-3		7.20E-09	6.31E-05	3.15E-08	7.20E-09	6.31E-05	3.15E-08	1.44E-08	6.31E-08
Dichlorobenzene	25321-22-6		7.20E-06	6.31E-02	3.15E-05	7.20E-06	6.31E-02	3.15E-05	1.44E-05	6.31E-05
Fluoranthene	206-44-0		1.80E-08	1.58E-04	7.88E-08	1.80E-08	1.58E-04	7.88E-08	3.60E-08	1.58E-07
Fluorene	86-73-7		1.68E-08	1.47E-04	7.36E-08	1.68E-08	1.47E-04	7.36E-08	3.36E-08	1.47E-07
Formaldehyde	50-00-0	x	1.78E+00	1.56E+04	7.80E+00	1.78E+00	1.56E+04	7.80E+00	3.56E+00	1.56E+01
H2SO4 Mist	7664-93-9		8.27E-04	7.24E+00	3.62E-03	8.27E-04	7.24E+00	3.62E-03	1.65E-03	7.24E-03
Hexane	110-54-3	x	1.08E-02	9.46E+01	4.73E-02	1.08E-02	9.46E+01	4.73E-02	2.16E-02	9.46E-02
Indeno(1,2,3-cd)pyrene	193-39-5		1.08E-08	9.46E-05	4.73E-08	1.08E-08	9.46E-05	4.73E-08	2.16E-08	9.46E-08
Lead	7439-92-1	x	3.00E-06	2.63E-02	1.31E-05	3.00E-06	2.63E-02	1.31E-05	6.00E-06	2.63E-05
Manganerse	7439-96-5	x	2.28E-06	2.00E-02	9.99E-06	2.28E-06	2.00E-02	9.99E-06	4.56E-06	2.00E-05
Mercury	7439-97-6	x	1.56E-06	1.37E-02	6.83E-06	1.56E-06	1.37E-02	6.83E-06	3.12E-06	1.37E-05
Molybdenum	7439-98-7		6.60E-06	5.78E-02	2.89E-05	6.60E-06	5.78E-02	2.89E-05	1.32E-05	5.78E-05
Naphthalene	91-20-3	x	3.66E-06	3.21E-02	1.60E-05	3.66E-06	3.21E-02	1.60E-05	7.32E-06	3.21E-05
Nickel	7440-02-0	x	1.26E-05	1.10E-01	5.52E-05	1.26E-05	1.10E-01	5.52E-05	2.52E-05	1.10E-04
PAC	N590		3.85E-06	3.38E-02	1.69E-05	3.85E-06	3.38E-02	1.69E-05	7.71E-06	3.38E-05
PBT	N/A		2.10E-06	1.84E-02	9.18E-06	2.10E-06	1.84E-02	9.18E-06	4.19E-06	1.84E-05
Phenanthrene	85-01-8		1.02E-07	8.94E-04	4.47E-07	1.02E-07	8.94E-04	4.47E-07	2.04E-07	8.94E-07
Phenol	108-95-2	x	1.86E+01	1.63E+05	8.15E+01	1.86E+01	1.63E+05	8.15E+01	3.72E+01	1.63E+02
POM	N/A		2.10E-06	1.84E-02	9.18E-06	2.10E-06	1.84E-02	9.18E-06	4.19E-06	1.84E-05
Pyrene	129-00-0		3.00E-08	2.63E-04	1.31E-07	3.00E-08	2.63E-04	1.31E-07	6.00E-08	2.63E-07
Selenium	7782-49-2	x	1.44E-07	1.26E-03	6.31E-07	1.44E-07	1.26E-03	6.31E-07	2.88E-07	1.26E-06
Sulfuric Acid	7664-93-9		8.27E-04	7.24E+00	3.62E-03	8.27E-04	7.24E+00	3.62E-03	1.65E-03	7.24E-03
Toluene	108-88-3	x	2.04E-05	1.79E-01	8.94E-05	2.04E-05	1.79E-01	8.94E-05	4.08E-05	1.79E-04
Vanadium	7440-62-2		1.38E-05	1.21E-01	6.04E-05	1.38E-05	1.21E-01	6.04E-05	2.76E-05	1.21E-04
Zinc	7440-66-6		1.74E-04	1.52E+00	7.62E-04	1.74E-04	1.52E+00	7.62E-04	3.48E-04	1.52E-03
Total HAPs		x	2.04E+01	1.79E+05	8.94E+01	2.04E+01	1.79E+05	8.94E+01	4.08E+01	1.79E+02

ATLAS RESIN PROPPANTS, LLC - Taylor | Facility-wide Summary of Emissions

Potential to Emit

Pollutant	CAS No.	Fed. HAP	Taylor						TOTAL	
			Tower A (S50)			Tower B (S150)				
			lb/hr	lb/yr	TPY	lb/hr	lb/yr	TPY	lb/hr	TPY
Criteria Air Pollutants										
PM			0.71	6,250.68	3.13	0.71	6,250.68	3.13	1.43	6.25
PM10			0.71	6,250.68	3.13	0.71	6,250.68	3.13	1.43	6.25
PM2.5			0.71	6,250.68	3.13	0.71	6,250.68	3.13	1.43	6.25
CO			0.50	4,415.04	2.21	0.50	4,415.04	2.21	1.01	4.42
CO2	124-38-9		720.00	6,307,200.00	3,153.60	720.00	6,307,200.00	3,153.60	1,440.00	6,307.20
NOx			24.21	212,078.34	106.04	24.21	212,078.34	106.04	48.42	212.08
SO2			0.00	31.54	0.02	0.00	31.54	0.02	0.01	0.03
VOC			0.19	1,686.63	0.84	0.19	1,686.63	0.84	0.39	1.69
Hazardous Pollutants										
2-Methylnaphthalene	91-57-6		1.44E-07	1.26E-03	6.31E-07	1.44E-07	1.26E-03	6.31E-07	2.88E-07	1.26E-06
3-Methylchloranthrene	56-49-5		1.08E-08	9.46E-05	4.73E-08	1.08E-08	9.46E-05	4.73E-08	2.16E-08	9.46E-08
7,12-Dimethylbenz(a)anthracene	57-97-6		9.60E-08	8.41E-04	4.20E-07	9.60E-08	8.41E-04	4.20E-07	1.92E-07	8.41E-07
Acenaphthene	83-32-9		1.08E-08	9.46E-05	4.73E-08	1.08E-08	9.46E-05	4.73E-08	2.16E-08	9.46E-08
Acenaphthylene	203-96-8		1.08E-08	9.46E-05	4.73E-08	1.08E-08	9.46E-05	4.73E-08	2.16E-08	9.46E-08
Ammonia	7664-41-7		1.59E+01	1.40E+05	6.98E+01	1.59E+01	1.40E+05	6.98E+01	3.19E+01	1.40E+02
Anthracene	120-12-7		1.44E-08	1.26E-04	6.31E-08	1.44E-08	1.26E-04	6.31E-08	2.88E-08	1.26E-07
Arsenic	7440-38-2	x	1.20E-06	1.05E-02	5.26E-06	1.20E-06	1.05E-02	5.26E-06	2.40E-06	1.05E-05
Barium	7440-39-3		2.64E-05	2.31E-01	1.16E-04	2.64E-05	2.31E-01	1.16E-04	5.28E-05	2.31E-04
Benz(a)anthracene	56-55-3		1.08E-08	9.46E-05	4.73E-08	1.08E-08	9.46E-05	4.73E-08	2.16E-08	9.46E-08
Benzene	71-43-2	x	1.26E-05	1.10E-01	5.52E-05	1.26E-05	1.10E-01	5.52E-05	2.52E-05	1.10E-04
Benzo(a)anthracene	56-55-3		1.08E-08	9.46E-05	4.73E-08	1.08E-08	9.46E-05	4.73E-08	2.16E-08	9.46E-08
Benzo(a)pyrene	50-32-8		7.20E-09	6.31E-05	3.15E-08	7.20E-09	6.31E-05	3.15E-08	1.44E-08	6.31E-08
Benzo(b)fluoranthene	205-99-2		1.08E-08	9.46E-05	4.73E-08	1.08E-08	9.46E-05	4.73E-08	2.16E-08	9.46E-08
Benzo(g,h,i)perylene	191-24-2		7.20E-09	6.31E-05	3.15E-08	7.20E-09	6.31E-05	3.15E-08	1.44E-08	6.31E-08
Benzo(k)fluoranthene	205-82-3		1.08E-08	9.46E-05	4.73E-08	1.08E-08	9.46E-05	4.73E-08	2.16E-08	9.46E-08
Beryllium	7440-41-7	x	7.20E-08	6.31E-04	3.15E-07	7.20E-08	6.31E-04	3.15E-07	1.44E-07	6.31E-07
Cadmium	7440-43-9	x	6.60E-06	5.78E-02	2.89E-05	6.60E-06	5.78E-02	2.89E-05	1.32E-05	5.78E-05
Carbazole	86-74-8		4.64E-10	4.07E-06	2.03E-09	4.64E-10	4.07E-06	2.03E-09	9.29E-10	4.07E-09
Chromium	7440-47-3	x	8.40E-06	7.36E-02	3.68E-05	8.40E-06	7.36E-02	3.68E-05	1.68E-05	7.36E-05
ysene	218-01-9		1.08E-08	9.46E-05	4.73E-08	1.08E-08	9.46E-05	4.73E-08	2.16E-08	9.46E-08
balt	7440-48-4	x	5.04E-07	4.42E-03	2.21E-06	5.04E-07	4.42E-03	2.21E-06	1.01E-06	4.42E-06
Copper	7440-50-8		5.10E-06	4.47E-02	2.23E-05	5.10E-06	4.47E-02	2.23E-05	1.02E-05	4.47E-05
Dibenz(a,h)anthracene	53-70-3		7.20E-09	6.31E-05	3.15E-08	7.20E-09	6.31E-05	3.15E-08	1.44E-08	6.31E-08
Dichlorobenzene	25321-22-6		7.20E-06	6.31E-02	3.15E-05	7.20E-06	6.31E-02	3.15E-05	1.44E-05	6.31E-05
Fluoranthene	206-44-0		1.80E-08	1.58E-04	7.88E-08	1.80E-08	1.58E-04	7.88E-08	3.60E-08	1.58E-07
Fluorene	86-73-7		1.68E-08	1.47E-04	7.36E-08	1.68E-08	1.47E-04	7.36E-08	3.36E-08	1.47E-07
Formaldehyde	50-00-0	x	1.83E-02	1.60E+02	7.99E-02	1.83E-02	1.60E+02	7.99E-02	3.65E-02	1.60E-01
H2SO4 Mist	7664-93-9		8.27E-04	7.24E+00	3.62E-03	8.27E-04	7.24E+00	3.62E-03	1.65E-03	7.24E-03
Hexane	110-54-3	x	1.08E-02	9.46E+01	4.73E-02	1.08E-02	9.46E+01	4.73E-02	2.16E-02	9.46E-02
Indeno(1,2,3-cd)pyrene	193-39-5		1.08E-08	9.46E-05	4.73E-08	1.08E-08	9.46E-05	4.73E-08	2.16E-08	9.46E-08
Lead	7439-92-1	x	3.00E-06	2.63E-02	1.31E-05	3.00E-06	2.63E-02	1.31E-05	6.00E-06	2.63E-05
Manganerse	7439-96-5	x	2.28E-06	2.00E-02	9.99E-06	2.28E-06	2.00E-02	9.99E-06	4.56E-06	2.00E-05
Mercury	7439-97-6	x	1.56E-06	1.37E-02	6.83E-06	1.56E-06	1.37E-02	6.83E-06	3.12E-06	1.37E-05
Molybdenum	7439-98-7		6.60E-06	5.78E-02	2.89E-05	6.60E-06	5.78E-02	2.89E-05	1.32E-05	5.78E-05
Naphthalene	91-20-3	x	3.66E-06	3.21E-02	1.60E-05	3.66E-06	3.21E-02	1.60E-05	7.32E-06	3.21E-05
Nickel	7440-02-0	x	1.26E-05	1.10E-01	5.52E-05	1.26E-05	1.10E-01	5.52E-05	2.52E-05	1.10E-04
PAC	N590		3.85E-06	3.38E-02	1.69E-05	3.85E-06	3.38E-02	1.69E-05	7.71E-06	3.38E-05
PBT	N/A		2.10E-06	1.84E-02	9.18E-06	2.10E-06	1.84E-02	9.18E-06	4.19E-06	1.84E-05
Phenanthrene	85-01-8		1.02E-07	8.94E-04	4.47E-07	1.02E-07	8.94E-04	4.47E-07	2.04E-07	8.94E-07
Phenol	108-95-2	x	1.86E-01	1.63E+03	8.15E-01	1.86E-01	1.63E+03	8.15E-01	3.72E-01	1.63E+00
POM	N/A		2.10E-06	1.84E-02	9.18E-06	2.10E-06	1.84E-02	9.18E-06	4.19E-06	1.84E-05
Pyrene	129-00-0		3.00E-08	2.63E-04	1.31E-07	3.00E-08	2.63E-04	1.31E-07	6.00E-08	2.63E-07
Selenium	7782-49-2	x	1.44E-07	1.26E-03	6.31E-07	1.44E-07	1.26E-03	6.31E-07	2.88E-07	1.26E-06
Sulfuric Acid	7664-93-9		8.27E-04	7.24E+00	3.62E-03	8.27E-04	7.24E+00	3.62E-03	1.65E-03	7.24E-03
Toluene	108-88-3	x	2.04E-05	1.79E-01	8.94E-05	2.04E-05	1.79E-01	8.94E-05	4.08E-05	1.79E-04
Vanadium	7440-62-2		1.38E-05	1.21E-01	6.04E-05	1.38E-05	1.21E-01	6.04E-05	2.76E-05	1.21E-04
Zinc	7440-66-6		1.74E-04	1.52E+00	7.62E-04	1.74E-04	1.52E+00	7.62E-04	3.48E-04	1.52E-03
Total HAPs		x	2.15E-01	1.89E+03	9.43E-01	2.15E-01	1.89E+03	9.43E-01	4.30E-01	1.89E+00

ATLAS RESIN PROPPANTS, LLC - Taylor | Facility-wide Summary of Emissions

Actual

Pollutant	CAS No.	Fed. HAP	Taylor						TOTAL	
			Tower A (S50)			Tower B (S150)				
			lb/hr	lb/yr	TPY	lb/hr	lb/yr	TPY	lb/hr	TPY
Criteria Air Pollutants										
PM			0.55	4,688.01	2.34	0.55	4,688.01	2.34	1.09	4.69
PM10			0.55	4,688.01	2.34	0.55	4,688.01	2.34	1.09	4.69
PM2.5			0.55	4,688.01	2.34	0.55	4,688.01	2.34	1.09	4.69
CO			0.50	3,311.28	1.66	0.50	3,311.28	1.66	1.01	3.31
CO2	124-38-9		720.00	4,730,400.00	2,365.20	720.00	4,730,400.00	2,365.20	1,440.00	4,730.40
NOx			18.31	159,058.76	79.53	18.31	159,058.76	79.53	36.61	159.06
SO2			0.00	23.65	0.01	0.00	23.65	0.01	0.01	0.02
VOC			0.15	1,264.97	0.63	0.15	1,264.97	0.63	0.31	1.26
Hazardous Pollutants										
2-Methylnaphthalene	91-57-6		1.44E-07	9.46E-04	4.73E-07	1.44E-07	9.46E-04	4.73E-07	2.88E-07	9.46E-07
3-Methylchloranthrene	56-49-5		1.08E-08	7.10E-05	3.55E-08	1.08E-08	7.10E-05	3.55E-08	2.16E-08	7.10E-08
7,12-Dimethylbenz(a)anthracene	57-97-6		9.60E-08	6.31E-04	3.15E-07	9.60E-08	6.31E-04	3.15E-07	1.92E-07	6.31E-07
Acenaphthene	83-32-9		1.08E-08	7.10E-05	3.55E-08	1.08E-08	7.10E-05	3.55E-08	2.16E-08	7.10E-08
Acenaphthylene	203-96-8		1.08E-08	7.10E-05	3.55E-08	1.08E-08	7.10E-05	3.55E-08	2.16E-08	7.10E-08
Ammonia	7664-41-7		1.20E+01	1.05E+05	5.23E+01	1.20E+01	1.05E+05	5.23E+01	2.39E+01	1.05E+02
Anthracene	120-12-7		1.44E-08	9.46E-05	4.73E-08	1.44E-08	9.46E-05	4.73E-08	2.88E-08	9.46E-08
Arsenic	7440-38-2	x	1.20E-06	7.88E-03	3.94E-06	1.20E-06	7.88E-03	3.94E-06	2.40E-06	7.88E-06
Barium	7440-39-3		2.64E-05	1.73E-01	8.67E-05	2.64E-05	1.73E-01	8.67E-05	5.28E-05	1.73E-04
Benz(a)anthracene	56-55-3		1.08E-08	7.10E-05	3.55E-08	1.08E-08	7.10E-05	3.55E-08	2.16E-08	7.10E-08
Benzene	71-43-2	x	1.26E-05	8.28E-02	4.14E-05	1.26E-05	8.28E-02	4.14E-05	2.52E-05	8.28E-05
Benzo(a)anthracene	56-55-3		1.08E-08	7.10E-05	3.55E-08	1.08E-08	7.10E-05	3.55E-08	2.16E-08	7.10E-08
Benzo(a)pyrene	50-32-8		7.20E-09	4.73E-05	2.37E-08	7.20E-09	4.73E-05	2.37E-08	1.44E-08	4.73E-08
Benzo(b)fluoranthene	205-99-2		1.08E-08	7.10E-05	3.55E-08	1.08E-08	7.10E-05	3.55E-08	2.16E-08	7.10E-08
Benzo(g,h,i)perylene	191-24-2		7.20E-09	4.73E-05	2.37E-08	7.20E-09	4.73E-05	2.37E-08	1.44E-08	4.73E-08
Benzo(k)fluoranthene	205-82-3		1.08E-08	7.10E-05	3.55E-08	1.08E-08	7.10E-05	3.55E-08	2.16E-08	7.10E-08
Beryllium	7440-41-7	x	7.20E-08	4.73E-04	2.37E-07	7.20E-08	4.73E-04	2.37E-07	1.44E-07	4.73E-07
Cadmium	7440-43-9	x	6.60E-06	4.34E-02	2.17E-05	6.60E-06	4.34E-02	2.17E-05	1.32E-05	4.34E-05
Carbazole	86-74-8		4.64E-10	3.05E-06	1.53E-09	4.64E-10	3.05E-06	1.53E-09	9.29E-10	3.05E-09
Chromium	7440-47-3	x	8.40E-06	5.52E-02	2.76E-05	8.40E-06	5.52E-02	2.76E-05	1.68E-05	5.52E-05
[illegible]ysene	218-01-9		1.08E-08	7.10E-05	3.55E-08	1.08E-08	7.10E-05	3.55E-08	2.16E-08	7.10E-08
[illegible]balt	7440-48-4	x	5.04E-07	3.31E-03	1.66E-06	5.04E-07	3.31E-03	1.66E-06	1.01E-06	3.31E-06
Copper	7440-50-8		5.10E-06	3.35E-02	1.68E-05	5.10E-06	3.35E-02	1.68E-05	1.02E-05	3.35E-05
Dibenz(a,h)anthracene	53-70-3		7.20E-09	4.73E-05	2.37E-08	7.20E-09	4.73E-05	2.37E-08	1.44E-08	4.73E-08
Dichlorobenzene	25321-22-6		7.20E-06	4.73E-02	2.37E-05	7.20E-06	4.73E-02	2.37E-05	1.44E-05	4.73E-05
Fluoranthene	206-44-0		1.80E-08	1.18E-04	5.91E-08	1.80E-08	1.18E-04	5.91E-08	3.60E-08	1.18E-07
Fluorene	86-73-7		1.68E-08	1.10E-04	5.52E-08	1.68E-08	1.10E-04	5.52E-08	3.36E-08	1.10E-07
Formaldehyde	50-00-0	x	1.38E-02	1.20E+02	6.00E-02	1.38E-02	1.20E+02	6.00E-02	2.76E-02	1.20E-01
H2SO4 Mist	7664-93-9		8.27E-04	5.43E+00	2.72E-03	8.27E-04	5.43E+00	2.72E-03	1.65E-03	5.43E-03
Hexane	110-54-3	x	1.08E-02	7.10E+01	3.55E-02	1.08E-02	7.10E+01	3.55E-02	2.16E-02	7.10E-02
Indeno(1,2,3-cd)pyrene	193-39-5		1.08E-08	7.10E-05	3.55E-08	1.08E-08	7.10E-05	3.55E-08	2.16E-08	7.10E-08
Lead	7439-92-1	x	3.00E-06	1.97E-02	9.86E-06	3.00E-06	1.97E-02	9.86E-06	6.00E-06	1.97E-05
Manganerse	7439-96-5	x	2.28E-06	1.50E-02	7.49E-06	2.28E-06	1.50E-02	7.49E-06	4.56E-06	1.50E-05
Mercury	7439-97-6	x	1.56E-06	1.02E-02	5.12E-06	1.56E-06	1.02E-02	5.12E-06	3.12E-06	1.02E-05
Molybdenum	7439-98-7		6.60E-06	4.34E-02	2.17E-05	6.60E-06	4.34E-02	2.17E-05	1.32E-05	4.34E-05
Naphthalene	91-20-3	x	3.66E-06	2.40E-02	1.20E-05	3.66E-06	2.40E-02	1.20E-05	7.32E-06	2.40E-05
Nickel	7440-02-0	x	1.26E-05	8.28E-02	4.14E-05	1.26E-05	8.28E-02	4.14E-05	2.52E-05	8.28E-05
PAC	N590		3.85E-06	2.53E-02	1.27E-05	3.85E-06	2.53E-02	1.27E-05	7.71E-06	2.53E-05
PBT	N/A		2.10E-06	1.38E-02	6.89E-06	2.10E-06	1.38E-02	6.89E-06	4.19E-06	1.38E-05
Phenanthrene	85-01-8		1.02E-07	6.70E-04	3.35E-07	1.02E-07	6.70E-04	3.35E-07	2.04E-07	6.70E-07
Phenol	108-95-2	x	1.40E-01	1.22E+03	6.11E-01	1.40E-01	1.22E+03	6.11E-01	2.79E-01	1.22E+00
POM	N/A		2.10E-06	1.38E-02	6.89E-06	2.10E-06	1.38E-02	6.89E-06	4.19E-06	1.38E-05
Pyrene	129-00-0		3.00E-08	1.97E-04	9.86E-08	3.00E-08	1.97E-04	9.86E-08	6.00E-08	1.97E-07
Selenium	7782-49-2	x	1.44E-07	9.46E-04	4.73E-07	1.44E-07	9.46E-04	4.73E-07	2.88E-07	9.46E-07
Sulfuric Acid	7664-93-9		8.27E-04	5.43E+00	2.72E-03	8.27E-04	5.43E+00	2.72E-03	1.65E-03	5.43E-03
Toluene	108-88-3	x	2.04E-05	1.34E-01	6.70E-05	2.04E-05	1.34E-01	6.70E-05	4.08E-05	1.34E-04
Vanadium	7440-62-2		1.38E-05	9.07E-02	4.53E-05	1.38E-05	9.07E-02	4.53E-05	2.76E-05	9.07E-05
Zinc	7440-66-6		1.74E-04	1.14E+00	5.72E-04	1.74E-04	1.14E+00	5.72E-04	3.48E-04	1.14E-03
Total HAPs		x	1.64E-01	1.41E+03	7.07E-01	1.64E-01	1.41E+03	7.07E-01	3.28E-01	1.41E+00

ATLAS RESIN PROPPANTS, LLC — Estimation of NOx & NH3 Emissions

TAYLOR, WISCONSIN

The hexamethylene tetramine (Hexa) used in the sand coating operations is the primary source of nitrogen introduced into the operation. Specifically, the hexa molecule (C6H12N4) contains four moles of nitrogen. The manufacturer of the recuperative thermal oxidizers, Catalytic Products International (CPI), states that less than 10 percent of the total nitrogen available at the inlet to an oxidizer is converted to nitrogen oxides (NOx). According to CPI representatives, stack testing of its recuperative thermal oxidizer on similar operations have not resulted in detectable ammonia (NH3) concentrations; in such case, they recommended that a 5 ppm concentration be assumed for NH3. The balance of the nitrogen is expected to be as N2. A 5 ppm concentration of NH3 yields a estimated 0.08 lbs-NH3 per hour, per oxidizer. In lieu of this estimate, modeling has been used to establish a more conservative emissions rate - specifically, the stated concentration, when multiplied by a conservative factor of 200, still yields acceptable ambient impacts.

Process Capacity Data - Per Line (Tower)

Batch Size, lb/batch	3,100
Max. Batches / Hr	12
Max. Batch Rate, lb/hr	37,200
Hexa Solution, % Hexa, by wt.	30%
Lbs-Hexa Solution/Batch	50
Lbs-Hexa / Batch	15
Lbs-Hexa / Hr	180

Molecular Weights, lb/mole

MW- Hexa	140.19	C6H12N4
MW - NH3	17.031	NH3
MW - N	14.007	N
MW - Nox	46.005	NO2 [Assumed as NO2]

Estimation of Available Nitrogen

Moles-Hexa / Hr = 180 lbs-Hexa / 1 hr-line × 1 mole-Hexa / 140.19 lb-Hexa = 1.28 Moles-Hexa / 1 Hr-line

Available Nitrogen = 1.28 Moles-Hexa / 1 hr-line × 4 Mole-N / 1 Mole-Hexa × 14.007 lb-N / 1 Mole-N = 71.94 lb-N / 1 Hr-line

Ammonia Generation = 71.94 lb-N / 1 hr-line × 17.031 lb-NH3/mole / 14.007 lb-N/mole × 1 mole-NH3 / 1 mole-N = 87.47 lb-NH3 / 1 Hr-line

87.47 lbs-NH3 / 1 hr-line × 1 mole-NH3 / 17.031 lb-NH3 = 5.14 Mole-NH3 / 1 Hr-line

Estimation of NOx Emissions [Attributed Solely to Hexa]

Available Nitrogen	71.94	lb-N/hr-line
Retention of Nitrogen in Sand:	0.000753	% Nitrogen in Sand, by wt. [Based on manufacturer data]
Nitrogen Retained in Sand	0.05	lb-N/hr-line
Nitorgen Inlet Loading	71.88	lb-N/hr-line
CPI Stated Conversion of Inlet N to NOx:	10%	[CPI Document entitled, QUADRANT SR - *Thermal Oxidizer Process Design & Environmental Control Benefits for the Sand Coating Industries*]

71.88 lb-N/hr-line x 10% = 7.19 lb-N/hr-line

7.19 lb-N/hr-line x 46.005 lb-Nox/mole-NOx / 14.007 lb-N/mole-N = 23.61 lb-NOx/hr-line

23.61 lb-NOx/hr-line x 8,760 hr/yr / (2,000 lb/ton) = 103 Ton/yr-line

Estimation of NOx Emissions [Attributed Solely to Natural Gas Combustion]

	Oxidizer	Dust Heater	Total	NOx MTE/PTE lb/hr	lb/yr	TPY
Max. Capacity, MMBtu/hr	4.5	1.5	6.0			
Max. Capacity, CF6/hr	0.0045	0.0015	0.0060	0.6	5,256	2.63
Nat. Gas Heat Input, MMBtu/CF6	1,000					
AP-42 Emission Factor, lb/CF6	100					

Estimation of Ammonia Emissions [Attributed Solely to Hexa]

Estimate based on CPI Statement

NH3 Emissions (Outlet):	5	ppmv, which is calculated to be equivalent to (see attached)	0.08 lbs-NH3/hr-line
Increase Factor:	200	[Conservative Assumption]	
Adjuated Estimated Outlet Emissions:	200 x	0.0795443 lbs-NH3/hr	15.91 lbs-NH3/hr-line

15.91 lbs-NH3/hr-line x 14.007 lb-N/mole / 17.031 lb-NH3/mole x 1 mole-N/ 1 mole NH3 = 13.08 moles-N/hr-line

Estimated Conversion of NH3: (87.47 lbs-NH3/hr-line - 15.91 lbs-NH3/hr-line) / 87.47 lbs-NH3/hr-line = 82%

Nitrogen Balance

Available Nitrogen:	71.94	lbs-N/hr-line	100.00%
Retained in Sand:	0.28	lbs-N/hr-line	0.39%
Converted to NOx:	7.19	lbs-N/hr-line	9.99%
Converted to NH3:	13.08	lbs-N/hr-line	18.19%
Converted to N2:	51.39	lbs-N/hr-line	71.43%

ATLAS RESIN PROPPANTS, LLC — NH3 Estimate (Concentration-Based)

TAYLOR, WISCONSIN

Chemical: The hexamethylene tetramine (Hexa) used in — Ammonia
Molecular Weight: 17.031 g/g-mole
Estimated Concentration: 5.00 ppmv *[Estimate per CPI representatives]*

MW =	17.03	g/gmol		
P =	1.0	atm		
T =	770.00	°F	or	683.15 K
R =	0.08206	L-atm/gmol-K		
P/RT =	0.0178	gmol/L		

$$P/RT = \frac{1.0 \text{ atm}}{0.08206 \text{ L-atm/gmol-K}} \Big| \frac{1}{683.15 \text{ K}} = 0.0178383 \text{ gmol/L}$$

$$\frac{0.017838257 \text{ gmol}}{1 \text{ L}} \Big| \frac{1000 \text{ L}}{1 \text{ m}^3} = 17.8 \text{ gmol/m}^3$$

Conversion ppm to mg/m³

C_{mass} = 17.8 gmol/m³ x 5.00 ppm x 17.03 g/gmol = 1,519 µg/m³ or 1.52 mg/m³

Conversion to lb/hr

Stack Data:

Flow	6,000	SCFM	13,982	ACFM
Temp.	770	F or	683.15	K
Inside Diam.	29.625	" ID		
Area	4.79	ft²		
Velocity	2,921	FPM		

Emission rate, lb/hr = 1.52 mg/m³ x 2.20E-06 lb/mg x 0.0283 m³/ft³ x 13,982 ACFM x 60 min/hr
= 0.08 lb/hr

ATLAS RESIN PROPPANTS, LLC — Sand Coating Operations - Towers A & B

TAYLOR, WISCONSIN — **Production-Based Emissions per Tower (excluding natural gas combustion)**

The hexamethylene tetramine (Hexa) used in the sand coating operations is the primary sour

Tower A 37,200 lb-product/hr

Tower B 37,200 lb-product/hr

Oxidizer Control Efficiency

VOC 99% *[CPI specification]*

Phenol 99% *[CPI specification]*

PM 90% *[See Note 5]*

Pollutant		Capacity		Emission Factor		Notes	Oxidizer	MTE			PTE			Actual		
Name	CAS	Amount	Unit/hr	Amount	lb/Unit		% Control	lb/hr	lb/yr	TPY	lb/hr	lb/yr	TPY	lb/hr	lb/yr	TPY
VOC		37,200	lb-product/hr	4.29E-04	lb/product	3	99%	15.95	139,755.10	69.88	0.16	1,397.55	0.70	0.12	1,048.16	0.52
Ammonia					lb/hr	4	82%	87.47	766,231.00	383.12	15.91	139,361.62	69.68	11.93	104,521.21	52.26
Formaldehyde	50-00-0	37,200	lb-product/hr	4.78E-05	lb/product	3	99%	1.78	15,592.80	7.80	0.02	155.93	0.08	0.01	116.95	0.06
Phenol	108-95-2	37,200	lb-product/hr	5.00E-04	lb/product	3	99%	18.61	163,023.60	81.51	0.19	1,630.24	0.82	0.14	1,222.68	0.61
NOx					lb/hr	4	0%	23.61	206,822.34	103.41	23.61	206,822.34	103.41	17.71	155,116.76	77.56
PM		37,200	lb-product/hr	1.80E-04	lb/product	3, 5	90%	6.68	58,512.22	29.26	0.67	5,851.22	2.93	0.50	4,388.42	2.19
PM10		37,200	lb-product/hr	1.80E-04	lb/product	3, 5	90%	6.68	58,512.22	29.26	0.67	5,851.22	2.93	0.50	4,388.42	2.19
PM2.5		37,200	lb-product/hr	1.80E-04	lb/product	3, 5	90%	6.68	58,512.22	29.26	0.67	5,851.22	2.93	0.50	4,388.42	2.19

Notes

1. Maximum operating schedule: 8,760 hr/yr
2. Calculated as follows:
   MTE - Hourly, lb/hr = (EF, lb/Units) x (Capacity, Unit/hr)
   MTE - Annual, lb/yr = (MTE Hourly, lb/hr) x (Maximum Operating Schedule, hr/yr)
   PTE equals the MTE multiplied by the respective pollutant-specific oxidizer control efficiency.
   Actual equalt 75% of the PTE.
3. Based on maximum historical stack testing information for Atlas' Taylor and Merrillan facilities. Formaldehyde and particulate emission factors are estimated based on outlet rates with assumed control efficiencies.
4. See 'Estimation of NOx & NH3 Emissions' for derivation, including conservatively estimated control (attributed to selective non-catalytic reduction in combustion chamber that relies on the NH3 from hexa).
5. Per CPI representatives, outlet particulate emissions are expected to be limited to natural gas combustion by-products.
   However, as a conservative assumption it is assumed that particulate emissions will be controlled by at least 90%.

Allowable Limits

NR 415.05(1)(m)	0.2	lbs/1,000 lbs of exhaust	NR 415.05(2)	3.59P^0.62
Exhaust Flowrate:	13,982	ACFM	Production, P:	18.6 TPH
Exhaust Temperature:	770	°F		
Est. Air Density @ Temp.:	0.032	lb/CF		
Est. Mass of Exhaust:	27,022	lb-exhaust/hr		
Allowable PM:	5.40	lb-PM/hr	Allowable PM:	21.99 lb-PM/hr

ATLAS RESIN PROPPANTS, LLC - Taylor — Recuperative Thermal Oxidizer

Natural Gas Combustion Emissions per Oxidizer

Chemical	CAS No.	The hexamethylene tetramine (H EF* lbs/CF6	Estimated Emission Actual lbs/hr	Actual lbs/yr	MTE/PTE lbs/hr	MTE/PTE lbs/yr
2-Methylnaphthalene	91-57-6	2.40E-05	1.44E-07	9.46E-04	1.44E-07	1.26E-03
3-Methylchloranthrene	56-49-5	< 1.80E-06	1.08E-08	7.10E-05	1.08E-08	9.46E-05
7,12-Dimethylbenz(a)anthracene	57-97-6	< 1.60E-05	9.60E-08	6.31E-04	9.60E-08	8.41E-04
Acenaphthene	83-32-9	< 1.80E-06	1.08E-08	7.10E-05	1.08E-08	9.46E-05
Acenaphthylene	203-96-8	< 1.80E-06	1.08E-08	7.10E-05	1.08E-08	9.46E-05
Anthracene	120-12-7	< 2.40E-06	1.44E-08	9.46E-05	1.44E-08	1.26E-04
Ammonia	7664-41-7	3.20E+00	1.92E-02	1.26E+02	1.92E-02	1.68E+02
Benz(a)anthracene	56-55-3	< 1.80E-06	1.08E-08	7.10E-05	1.08E-08	9.46E-05
Benzene	71-43-2	2.10E-03	1.26E-05	8.28E-02	1.26E-05	1.10E-01
Benzo(a)pyrene	50-32-8	< 1.20E-06	7.20E-09	4.73E-05	7.20E-09	6.31E-05
Benzo(b)fluoranthene	205-99-2	< 1.80E-06	1.08E-08	7.10E-05	1.08E-08	9.46E-05
Benzo(g,h,I)perylene	191-24-2	< 1.20E-06	7.20E-09	4.73E-05	7.20E-09	6.31E-05
Benzo(k)fluoranthene	205-82-3	< 1.80E-06	1.08E-08	7.10E-05	1.08E-08	9.46E-05
Carbazole	86-74-8	7.74E-08	4.64E-10	3.05E-06	4.64E-10	4.07E-06
Chrysene	218-01-9	< 1.80E-06	1.08E-08	7.10E-05	1.08E-08	9.46E-05
Dibenzo(a,h)anthracene	53-70-3	< 1.20E-06	7.20E-09	4.73E-05	7.20E-09	6.31E-05
Dichlorobenzene	25321-22-6	1.20E-03	7.20E-06	4.73E-02	7.20E-06	6.31E-02
Fluoranthene	206-44-0	3.00E-06	1.80E-08	1.18E-04	1.80E-08	1.58E-04
Fluorene	86-73-7	2.80E-06	1.68E-08	1.10E-04	1.68E-08	1.47E-04
Formaldehyde	50-00-0	7.50E-02	4.50E-04	2.96E+00	4.50E-04	3.94E+00
Hexane	110-54-3	1.80E+00	1.08E-02	7.10E+01	1.08E-02	9.46E+01
Indeno(1,2,3-cd)pyrene	193-39-5	< 1.80E-06	1.08E-08	7.10E-05	1.08E-08	9.46E-05
Naphthalene	91-20-3	6.10E-04	3.66E-06	2.40E-02	3.66E-06	3.21E-02
Phenanathrene	85-01-8	1.70E-05	1.02E-07	6.70E-04	1.02E-07	8.94E-04
Pyrene	129-00-0	5.00E-06	3.00E-08	1.97E-04	3.00E-08	2.63E-04
Toluene	108-88-3	3.40E-03	2.04E-05	1.34E-01	2.04E-05	1.79E-01
Arsenic	7440-38-2	2.00E-04	1.20E-06	7.88E-03	1.20E-06	1.05E-02
Barium	7440-39-3	4.40E-03	2.64E-05	1.73E-01	2.64E-05	2.31E-01
Beryllium	7440-41-7	1.20E-05	7.20E-08	4.73E-04	7.20E-08	6.31E-04
Cadmium	7440-43-9	1.10E-03	6.60E-06	4.34E-02	6.60E-06	5.78E-02
Chromium	7440-47-3	1.40E-03	8.40E-06	5.52E-02	8.40E-06	7.36E-02
Cobalt	7440-48-4	8.40E-05	5.04E-07	3.31E-03	5.04E-07	4.42E-03
Copper	7440-50-8	8.50E-04	5.10E-06	3.35E-02	5.10E-06	4.47E-02
Manganerse	7439-96-5	3.80E-04	2.28E-06	1.50E-02	2.28E-06	2.00E-02
Mercury	7439-97-6	2.60E-04	1.56E-06	1.02E-02	1.56E-06	1.37E-02
Molybdenum	7439-98-7	1.10E-03	6.60E-06	4.34E-02	6.60E-06	5.78E-02
Nickel	7440-02-0	2.10E-03	1.26E-05	8.28E-02	1.26E-05	1.10E-01
Selenium	7782-49-2	2.40E-05	1.44E-07	9.46E-04	1.44E-07	1.26E-03
Vanadium	7440-62-2	2.30E-03	1.38E-05	9.07E-02	1.38E-05	1.21E-01
Zinc	7440-66-6	2.90E-02	1.74E-04	1.14E+00	1.74E-04	1.52E+00
PM		7.6	4.56E-02	3.00E+02	4.56E-02	399.46
PM10		7.6	4.56E-02	3.00E+02	4.56E-02	399.46
PM2.5		7.6	4.56E-02	3.00E+02	4.56E-02	399.46
SO2		0.6	3.60E-03	2.37E+01	3.60E-03	31.54
NOx		100	6.00E-01	3.94E+03	6.00E-01	5,256.00
VOC		5.5	3.30E-02	2.17E+02	3.30E-02	289.08
CO		84	5.04E-01	3.31E+03	5.04E-01	4,415.04
CO2	124-38-9	120,000	720	4.73E+06	7.20E+02	6,307,200.00
Lead	7439-92-1	0.0005	3.00E-06	1.97E-02	3.00E-06	2.63E-02
H2SO4 Mist	7664-93-9	1.38E-01	8.27E-04	5.43E+00	8.27E-04	7.24E+00
POM	N/A	8.82E-05	5.29E-07	3.48E-03	5.29E-07	4.64E-03

** Derived from Section 1.4, AP-42, 5th edition, July 1998, except where otherwise noted below.*

EF = Emission Factor
CF6 = Million cubic feet (natural gas)
MTE = Maximum Theoretical Emissions
RL = Reporting Level

Heat Input:	1,000.0	MMBtu/CF6
Capacity:	6.00	MMBtu/hr
Max. Op. Sched.:	8,760	hrs/yr
Actual Use:	39.42	CF6/yr
Actual Op. Sched.:	6,570	hrs/yr

Notes:

1. Carbazole emission factor derived from *L&E Air Emissions from Sources of POM* , EPA-454/R-98-014, July 1998.
   Ammonia emission factor obtained from USEPA's FIRE database.
2. *Assumed conversion of SO2 to SO3:* 15%

ATLAS RESIN PROPPANTS, LLC — Summary of Historical Stack Test Data - VOC & Phenol

TAYLOR, WISCONSIN

s recuperative thermal oxidizer on similar	Units	Test Run 1	Test Run 2	Test Run 3	Avg.	Max.	Assumed Control	Safety Factor	Estimated Inlet EF	Notes
Taylor - Tower A Stack Test Data [Badger Laboratories & Engineering Co., Inc. - Report Dated June 3, 2006]										
Throughput	lb-product/hr				29,731					
Inlet Loading - Phenol	lb-phenol/hr		3.10	4.07	3.58					
Inlet Loading - Phenol	lb-phenol/lb-product				1.21E-04	1.21E-04				
Outlet Loading - PM	lb-PM/hr	1.06	1.30	1.16	1.17					
Outlet Loading - PM	lb-PM/lb-product				3.94E-05	3.94E-05	70%	1.32	1.73E-04	Control and Safety Factor from original Taylor permit application
Taylor - Tower B Stack Test Data [Badger Laboratories & Engineering Co., Inc. - Report Dated April 24, 2009]										
Throughput	lb-product/hr	31,049	31,745	30,995	31,263					
Inlet Loading - VOC	lb-VOC/hr	6.68	6.03	9.44	7.38					
Inlet Loading - VOC	lb-VOC/lb-product	2.15E-04	1.90E-04	3.05E-04	2.37E-04	3.05E-04				
Inlet Loading - Phenol	lb-phenol/hr	1.57	0.11	1.27	0.98					
Inlet Loading - Phenol	lb-phenol/lb-product	5.07E-05	3.31E-06	4.08E-05	3.16E-05	5.07E-05				
Outlet Loading - PM	lb-PM/hr	0.92	1.31	1.20	1.14					
Outlet Loading - PM	lb-PM/lb-product	2.95E-05	4.13E-05	3.86E-05	3.65E-05	4.13E-05	77%	1	1.80E-04	Control from NR 407 renewal application
Merrillan - Tower C Stack Test Data [Badger Laboratories & Engineering Co., Inc. - Report Dated January 18, 2011]										
Throughput	lb-product/hr				30,981					
Inlet Loading - VOC	lb-VOC/hr	13.12	13.62	13.12	13.29					
Inlet Loading - VOC	lb-VOC/lb-product				4.29E-04	4.29E-04				
Outlet Loading - Formaldehyde	lb-formaldehyde/hr	0.01	0.12	0.14	0.09					
Outlet Loading - Formaldehyde	lb-formaldehyde/lb-product				2.86E-06	2.86E-06	90%	1	2.86E-05	Control is the average measured VOC control efficiency
Outlet Loading - PM	lb-PM/hr	0.23	0.27	0.29	0.26					
Outlet Loading - PM	lb-PM/lb-product				8.54E-06	8.54E-06	90%	1	8.54E-05	Control efficiency is per original construction permit application
Merrillan - Tower D Stack Test Data [Badger Laboratories & Engineering Co., Inc. - Report Dated January 18, 2011]										
Throughput	lb-product/hr				33,113					
Inlet Loading - VOC	lb-VOC/hr	10.80	11.25	11.05	11.03					
Inlet Loading - VOC	lb-VOC/lb-product				3.33E-04	3.33E-04				
Outlet Loading - Formaldehyde	lb-formaldehyde/hr	0.00	0.02	0.03	0.02					
Outlet Loading - Formaldehyde	lb-formaldehyde/lb-product				5.23E-07	5.23E-07	85%	1	3.49E-06	Control is the average measured VOC control efficiency
Outlet Loading - PM	lb-PM/hr	0.17	0.14	0.16	0.15					
Outlet Loading - PM	lb-PM/lb-product				4.66E-06	4.66E-06	90%	1	4.66E-05	Control efficiency is per original construction permit application
Merrillan - Tower D Stack Test Data [Badger Laboratories & Engineering Co., Inc. - Report Dated June 28, 2011]										
Throughput	lb-product/hr	31,823	31,823	31,823	31,823					
Inlet Loading - Phenol	lb-phenol/hr	11.52	12.16	12.12	11.93					
Inlet Loading - Phenol	lb-phenol/lb-product	3.62E-04	3.82E-04	3.81E-04	3.75E-04	3.82E-04				
Merrillan - Tower E Stack Test Data [Badger Laboratories & Engineering Co., Inc. - Report Dated December 12, 2011]										
Throughput	lb-product/hr	37,200	37,200	37,200	37,200					
Inlet Loading - VOC	lb-VOC/hr	11.42	13.09	12.78	12.43					
Inlet Loading - VOC	lb-VOC/lb-product	3.07E-04	3.52E-04	3.44E-04	3.34E-04	3.52E-04				
Inlet Loading - Phenol	lb-phenol/hr	14.66	16.00	15.88	15.51					
Inlet Loading - Phenol	lb-phenol/lb-product	3.94E-04	4.30E-04	4.27E-04	4.17E-04	4.30E-04				
Outlet Loading - Formaldehyde	lb-formaldehyde/hr	0.18	0.12	0.08	0.13					
Outlet Loading - Formaldehyde	lb-formaldehyde/lb-product	4.78E-06	3.20E-06	2.15E-06	3.38E-06	4.78E-06	90%	1	4.78E-05	Control is the average measured VOC control efficiency
Outlet Loading - PM	lb-PM/hr	0.44	0.37	0.46	0.43					
Outlet Loading - PM	lb-PM/lb-product	1.19E-05	1.01E-05	1.24E-05	1.15E-05	1.24E-05	90%	1	1.24E-04	Control efficiency is per original construction permit application
Merrillan - Tower F Stack Test Data [Badger Laboratories & Engineering Co., Inc. - Report Dated December 12, 2011]										
Throughput	lb-product/hr	37,200	37,200	37,200	37,200					
Inlet Loading - VOC	lb-VOC/hr	7.36	9.55	10.05	8.99					
Inlet Loading - VOC	lb-VOC/lb-product	1.98E-04	2.57E-04	2.70E-04	2.42E-04	2.70E-04				
Inlet Loading - Phenol	lb-phenol/hr	13.12	16.94	18.61	16.22					
Inlet Loading - Phenol	lb-phenol/lb-product	3.53E-04	4.55E-04	5.00E-04	4.36E-04	5.00E-04				
Outlet Loading - Formaldehyde	lb-formaldehyde/hr	0.18	0.12	0.08	0.13					
Outlet Loading - Formaldehyde	lb-formaldehyde/lb-product	4.78E-06	3.20E-06	2.15E-06	3.38E-06	4.78E-06	86%	1	3.42E-05	Control is the average measured VOC control efficiency
Outlet Loading - PM	lb-PM/hr	0.61	0.57	0.58	0.59					
Outlet Loading - PM	lb-PM/lb-product	1.65E-05	1.54E-05	1.57E-05	1.59E-05	1.65E-05	90%	1	1.65E-04	Control efficiency is per original construction permit application
MAXIMUM EMISSION FACTORS										
Inlet Loading - VOC	lb-VOC/lb-product					4.29E-04				
Inlet Loading - Phenol	lb-phenol/lb-product					5.00E-04				
Inlet Loading - Formaldehyde (est)	lb-formaldehyde/lb-product								4.78E-05	
Inlet Loading - PM (est)	lb-PM/lb-product								1.80E-04	

Appendix C
Dispersion Modeling

Air Quality Impact Analysis for Atlas Resin Proppants, LLC's Facility Located in Taylor, Wisconsin, Scrubber Replacement Project August 2012

Background

Atlas Resin Proppants, LLC (Atlas) is proposing to replace wet scrubber control devices with recuperative thermal oxidizers at its facility located in Taylor, Wisconsin (FID 627005280).. The proposed oxidizers will emit less volatile organic compounds (VOC), hazardous air pollutants (HAP), PM (PM_{10} and $PM_{2.5}$), and ammonia, but will introduce natural gas combustion-based pollutant emissions (notably nitrogen oxides). Because of the changes in control devices and emission limits, an air quality analysis has been completed for the facility. For PM (PM_{10} and $PM_{2.5}$) a net change analysis is presented. For NOx and ammonia, the predicted impact of the new configuration is presented.

Modeling Assumptions and Inputs

The modeling analysis was completed using the latest version of the AERMOD dispersion model (Version 12060). Some additional modeling details included the following items.

- Use of a five year set of meteorological data from the National Weather Service Eau Claire site for the years 2006-2010. These data were processed by the Wisconsin DNR.
- Use of the BPIP PRIME computer algorithm to calculate wind direction dependent building dimensions.
- Use of the AERMAP terrain processor program to estimate receptor elevation. The receptor network used consists of receptors spaced at 25 and 50 meter intervals.
- Use of regulatory default model options for the AERMOD model.

Each new RTO is projected to have the following emission rates.

Pollutant	Per RTO lb/hr
NO_x	24.21
PM_{10}	0.71
$PM_{2.5}$	0.71
Ammonia	15.93

The existing scrubbers have an allowable PM emission rate of 1.5 lb/hr. This value was used to determine the net change in impact for $PM_{2.5}$ and PM_{10} from the existing configuration to the proposed control device configuration.

The assumed stack parameters for the emission source considered in the analysis were as follows.

Model ID	Description	X(m)	Y(m)	Elev.(m)	Hgt.(m)	Temp(K)	Exit Velocity (m/s)	Diameter (m)
S50	S50-RTO	649537.4	4911520	274.46	28.04	683	14.8	0.753
S150	S150-RTO	649514.3	4911572	275.18	28.04	683	14.8	0.753
S50OLD	scrubber	649531.2	4911519	274.61	27.3	310	11.6	0.494
S150OLD	scrubber	649511.8	4911560	275.15	27.9	310	12.6	0.494

Modeling Procedure

The AERMOD dispersion model was executed using the stack parameters and emission rates previously listed. For PM_{10} and $PM_{2.5}$ the model was used to determine the net change in predicted impact between the current configuration and emission limits, and the proposed configuration. Consequently the proposed oxidizers were modeled for particulate matter assuming the 0.71 lb/hr emission rate (as noted above) and the scrubbers were modeled with a negative 1.5 lb/hr emission rate. The predicted results in comparison to corresponding Significant Impact Levels (SIL) are shown below.

Pollutant	Averaging Period	Worst Case Net Change ($\mu g/m^3$)	SIL ($\mu g/m3$)
PM_{10}	24-hr	0.01	5
	annual	0	1
$PM_{2.5}$	24-hr	0	1.2
	annual	0	0.30

For NO_x and ammonia the proposed allowable rates for the oxidizers were modeled to determine the maximum impacts.

Pollutant	Averaging Period	Maximum Predicted Impact ($\mu g/m^3$)	Background ($\mu g/m^3$)	Total ($\mu g/m^3$)	Air Quality Standard ($\mu g/m^3$)
NOx	annual	6.4	8	14.4	100
Ammonia	24-hr	74.6	na	74.6	418
	annual	4.2	na	4.2	100

On the basis of the results presented above the project does not have a significant air quality impacts for PM_{10} and $PM_{2.5}$. For NO_x and ammonia the predicted impacts are well below applicable air quality standards. The modeling analyses are considered to be complete and the results acceptable for this project.

Appendix D
Environmental Assessment

ENVIRONMENTAL ANALYSIS AND DECISION ON THE NEED
FOR AN ENVIRONMENTAL IMPACT STATEMENT (EIS)
Form 1600-1 Rev. 6-2010

Department of Natural Resources (DNR)

Region or Bureau
Type List Designation

NOTE TO REVIEWERS: This document is a DNR environmental analysis that evaluates probable environmental effects and decides on the need for an EIS. The attached analysis includes a description of the proposal and the affected environment. The DNR has reviewed the attachments and, upon certification, accepts responsibility for their scope and content to fulfill requirements in s. NR 150.22, Wis. Adm. Code. Your comments should address completeness, accuracy or the EIS decision. For your comments to be considered, they must be received by the contact person before 4:30 p.m., Insert Date.

Contact Person:
Title:
Address:
Telephone Number

Applicant: **Atlas Resin Proppants, LLC**

Address: **N7500 County Road P, Taylor, Wisconsin**

Title of Proposal: **NR 406 and NR 407 Permit to Construct and Operate – Recuperative Thermal Oxidizers**

Location: County: **Jackson** City/Town/Village: **Taylor**

Township Range Section(s):

PROJECT SUMMARY

1. Brief overview of the proposal including the DNR action (include cost and funding source if public funds involved)

Atlas Resin Proppants, LLC (Atlas) operates a resin-coated sand manufacturing plant in Taylor, Wisconsin under Wisconsin Department of Natural Resources (WDNR) Permit No. 627005280-P10.

In part, this facility has two sand coating lines that are designated as Tower A (Stack S50) and Tower B (Stack S150). Each line includes sand handling operations, and the blending of sand with a phenolic resin and a cross-linking agent in a batch mixer to coat the sand. The resin coated sand is transferred to a continuous mixer that fluidizes the coated sand until it is sufficiently cooled. The cross-linking agent that is used is hexamethylenetetramine (hexa). The primary emissions associated with the sand coating operations include particulate matter, volatile organic compounds (VOC), including phenol, and ammonia which is a decomposition product of the hexa. Each tower is equipped with a wet scrubber to control the particulate and VOC emissions, including phenol.

Concerns regarding ongoing maintenance and operating costs associated with the use of wet scrubbers to control emissions from the sand coating operations at the Taylor facility, as well as the restrictive nature of certain permit limits on production (i.e., limits established to ensure that phenol emissions for each sand coating line are less than 10 TPY, and that ammonia emissions do not exceed 250 tons per year and/or NR 445 thresholds) have prompted Atlas to reconsider potential oxidizer technologies as an alternative to wet scrubbers for controlling emissions of VOC, including phenol. At this time, Atlas is planning to replace the wet scrubbers with recuperative thermal oxidizers; however, no changes in production operations are planned in association with this change in control device technology. In part, this change serves to reduce potential federally regulated hazardous air pollutant

(HAP) emissions to levels that would allow the facility to be re-classified from a major source to a synthetic minor (area source) of HAPs, while increasing operational flexibility.

Recuperative thermal oxidizers were historically considered to be technically infeasible out of concerns regarding anticipated impacts of inlet particulate loading, energy efficiency, and the conversion of ammonia to nitrogen oxides (NO_x). Catalytic Products International (CPI) manufactures recuperative thermal oxidizers (Quadrant SR-6,000) that are designed to address many of these concerns. In particular, it utilizes a chain filter and cyclone filtration system to reduce the particulate inlet loading to the oxidizer. Its heat exchanger efficiency is rated at 65 percent, and it uses a center combustion tube paired with a preheat burner to operate at the lowest temperatures while providing high VOC and volatile HAP destruction efficiency (i.e., 99 percent). As for the conversion of nitrogen to NOx, CPI has stated that the ammonia in the exhaust (a decomposition product of the hexa) effectively mimics selective non-catalytic reduction (SNCR) in the combustion chamber, which effectively results in less than 10 percent of the available nitrogen (contained in the ammonia) being converted to NO_x. Moreover, ammonia concentrations at the outlet of the oxidizer are reported to be below detection levels.

2. Purpose and Need (include history and background as appropriate)

Atlas is proposing to replace the wet scrubbers with recuperative thermal oxidizers because of concerns over the ongoing maintenance and operational costs associated with the wet scrubbers. In a continuing effort to reduce environmental impacts, while sustaining sufficient operational flexibility, the planned control device replacements are intended and expected to:

- Reduce ongoing maintenance, and associated downtime and operating costs attributed to the use of wet scrubbers;
- Reduce the water consumption by eliminating the wet scrubbers, thereby reducing demands for groundwater from an onsite well;
- Eliminate chemical usage and onsite storage and handling associated with the scrubbers (e.g., caustic soda);
- Reduce the amount of wastewater generated that is shipped offsite for treatment and disposal;
- Reduce air emissions of particulate matter, VOC, and HAPs, including phenol, ammonia, and formaldehyde;
- Reclassify the facility from a major source to a synthetic minor source of HAPs; and
- Enhance operational flexibility by requiring enhanced control of select pollutant emissions to levels that would not constrain production - i.e., current limits established to ensure that phenol emissions for each sand coating line are less than 10 TPY, and that ammonia emissions do not exceed 250 tons per year and/or NR 445 thresholds can restrict how much of certain types of resins and hexa are used in each sand coating line.

3. Authorities and Approvals (list local, state and federal permits or approvals required)

Atlas' Taylor facility is currently classified as a major Part 70 source under Title V of the Clean Air Act Amendments (CAAA) of 1990 and the State of Wisconsin's corresponding NR 407, Wisconsin Administrative Code. The Taylor facility is currently permitted under WDNR Operation Permit No. 627005280-P10.

The proposed replacement of the wet scrubbers (C50 and C150 in the facility's operating permit) with recuperative thermal oxidizers units will require modifications to the facility's operation permit. A combined application an NR 406 and NR 407 construction permit and operation permit revision for the proposed changes was submitted to the WDNR on August 16, 2012. In order to remove the existing scrubbers and install the recuperative oxidizers before adverse winter weather conditions, Atlas has requested a construction permitting waiver to allow construction to commence prior to issuance of the permit, with the understanding that if the waiver is granted that operation could not commence until the permit is actually issued. Other environmental permits from the WDNR are not required and no other media permits are expected to be required.

PROPOSED PHYSICAL CHANGES (more fully describe the proposal)

4. Manipulation of Terrestrial Resources (include relevant quantities - sq. ft., cu. yard, etc.)

The replacement of the wet scrubbers with RTO units will occur on an existing industrial site. No new buildings or roads will be constructed as a result of this project. Because the recuperative thermal oxidizers will be roof-mounted, the building footprint will not be expanded as a result of this change.

5. Manipulation of Aquatic Resources (include relevant quantities - cfs, acre feet, MGD, etc.)

This project is not anticipated to affect aquatic resources.

6. Buildings, Treatment Units, Roads and Other Structures (include size of facilities, road miles, etc.)

Atlas does not anticipate the construction of any new buildings, roads, or other structures beyond the recuperative thermal oxidizers units. All construction will occur on an existing industrial site, located at N7500 County Road P, Taylor, Wisconsin.

7. Emissions and Discharges (include relevant characteristics and quantities)

Relative to air emissions, historical stack test results for the existing wet scrubbers have indicated VOC control efficiencies ranging from 27.5 to 54.5 percent. The planned recuperative thermal oxidizers offer a significantly increased VOC (including volatile HAPs) destruction efficiency of 99 percent, thereby reducing air emissions. In contrast to the caustic wet scrubbers which require a significant amount of water to control pollutant emissions that are effectively retained in spent scrubber solution, which must be transported off-site for disposal, recuperative thermal oxidizers do not require water to control emissions and do not generate a pollutant-entrained wastewater that must be shipped offsite for treatment and disposal. Rather than capturing and retaining pollutants for offsite treatment and disposal, the oxidizers destroy the majority of the volatile pollutants (i.e., reducing the organic compounds to carbon dioxide and water) so there is no additional waste stream generated that must be properly managed. By eliminating the need for offsite shipment of the resulting wastewater, not only is onsite wastewater generation reduced and offsite treatment & disposal demands, but vehicle traffic is reduced without the need for tank trucks to regularly pump-out and transport the spent scrubber solution off-site. Elimination of such tank truck transfer also reduces the potential for associated spills that could otherwise impact storm water runoff, soil and groundwater.

Based on a worst-case scenario conditions, the total available nitrogen inlet loading to each coating line would be approximately 71.94 pounds per hour per line (lb/hr-line). Of this, about 0.000753 percent by weight is expected to be retained in the sand, leaving 71.88 lbs-N/hr-line to be oxidized. Assuming a 10 percent conversion of nitrogen to NOx yields an emission rate of 23.61 lb-NOx/hr-line or 103 tons per year per line. Therefore, for two lines, the combined NO_x emissions will be approximately 206 TPY, which is less than the 250 TPY major PSD source threshold for NO_x (not considering emissions from natural gas combustion for building heating, etc.). Since there is no expected change in production throughput, the increase in control efficiency would allow the Taylor facility to drop below the major source threshold for HAPS. The following table summarizes the anticipated change in potential project emissions associated with the proposed control device replacements.

Table 1: Potential Project Emissions

Pollutant	Lines	OUTLET - Sand Coating Line Potential to Emit								
		Current Scrubbers			Recuperative TO			Change in Emissions		
		lb/hr	lb/day	TPY	lb/hr	lb/day	TPY	lb/hr	lb/day	TPY
PM	Tower A	1.5	36	6.57	0.71	17	3.13	-0.79	-19	-3.44
	Tower B	1.5	36	6.57	0.71	17	3.13	-0.79	-19	-3.44
	TOTAL	3.00	72	13.14	1.43	34	6.25	-1.57	-38	-6.89
VOC	Tower A	10.6	254	46.43	0.19	5	0.84	-10.41	-250	-45.58
	Tower B	11.0	264	48.18	0.19	5	0.84	-10.81	-259	-47.34
	TOTAL	21.60	518	94.61	0.39	9	1.69	-21.21	-509	-92.92
NOx	Tower A	0.00	0	0.00	24.21	581	106.04	24.21	581	106.04
	Tower B	0.00	0	0.00	24.21	581	106.04	24.21	581	106.04
	TOTAL	0.00	0	0.00	48.42	1,162	212.08	48.42	1,162	212.08
CO	Tower A	0.00	0	0.00	0.50	12	2.21	0.50	12	2.21
	Tower B	0.00	0	0.00	0.50	12	2.21	0.50	12	2.21
	TOTAL	0.00	0	0.00	1.01	24	4.42	1.01	24	4.42
SO2	Tower A	0.00	0	0.00	0.00	0	0.02	0.00	0	0.02
	Tower B	0.00	0	0.00	0.00	0	0.02	0.00	0	0.02
	TOTAL	0.00	0	0.00	0.01	0	0.03	0.01	0	0.03
Phenol	Tower A	2.8	67	9.5	0.19	4	0.82	-2.61	-63	-8.68
	Tower B	3.3	79	9.5	0.19	4	0.82	-3.11	-75	-8.68
	TOTAL	6.10	146	19.00	0.37	9	1.63	-5.73	-137	-17.37
Ammonia	1-line	61.47	1,501		15.93	382	69.76	-45.54	-1,119	
	2-lines	80.38	1,963		15.93	382	69.76	-64.46	-1,581	
	TOTAL	83.60	2,042	237.50	31.86	765	139.53	-51.74	-1,277	-97.97

Dispersion modeling has been performed which has demonstrated that the associated NO_x emissions from the recuperative thermal oxidizers will comply with respective national ambient air quality standards (NAAQS).

Dispersion modeling was completed for particulate matter (PM) emissions when the facility submitted the original permit application for the resin-coating lines, which indicated that potential PM emissions at 1.5 pounds per hour would meet application NAAQS. In comparison, at 0.71 pounds per hour the estimated potential particulate matter emission rates from each recuperative thermal oxidizer is less than half that of each wet scrubber. Dispersion modeling at this reduced rate has been performed, which demonstrates that such emissions will comply with current NAAQS.

As a result of the project, air toxic emission rates for ammonia and phenol emissions associated with the project have been demonstrated to be less than appropriate NR 445 table values. Although conservatively estimated ammonia emissions exceed the NR 445 table values, such emissions from the oxidizers are significantly decreased relative to that which was permitted from the scrubbers. Updated dispersion modeling indicates that the resulting impacts are acceptable relative to applicable ambient air concentrations.

Water

The facility obtains its water from an on-site well. The proposed project will greatly reduce the facility's water consumption. In calendar year 2011, the wet scrubbers used more than 87,550 gallons of water. The proposed project will reduce the amount of spent scrubber water that is generated and shipped offsite for treatment and disposal.

Solid Waste

The chain box and cyclonic separation systems in advance of each recuperative thermal oxidizer are expected to control greater than 95 percent control of particulate emissions, whereas the scrubbers were expected to provide less than 80 percent removal. Consequently, by controlling more particulate matter, less is available to be emitted to the atmosphere. The total mass of captured solids is expected to be greater than that which is captured by the scrubbers, but there may be a net decrease in the mass of waste since the oxidizers generate a dry solid waste, whereas the scrubbers generate a sludge that is high in moisture content which can increase its mass. In 2011, 176,664 pounds of such sludge was generated and transferred offsite for disposal.

8. Other Changes

Inherently, the use of natural gas fired thermal oxidizers will increase natural gas demands and air emissions of combustion byproducts, in particular NO_x. However, based on CPI information regarding the conversion of available nitrogen to NO_x, the estimated potential NO_x emissions from the two oxidizers are expected to be less than 250 TPY. Thus, PSD permitting will be avoided

9. Identify the maps, plans and other descriptive material attached

Attachment	1	USGS topographic map
Attachment	2	Site development plan
Attachment	3	Wisconsin Wetlands Inventory map
Attachment	4	DNR Karner Blue Butterfly Habitat maps

AFFECTED ENVIRONMENT (describe existing features that may be affected by proposal)

10. Information Based On (check all that apply):

☒ Literature/correspondence (specify major sources)

Wisconsin Wetlands Inventory, Wisconsin Department of Natural Resources

☒ Personal Contacts (list in item 26)

Field Analysis By: ☐ Author ☐ Other (list in item 26)

Past Experience With Site By: ☒ Author ☐ Other (list in item 26)

11. Physical Environment (topography, soils, water, air)

The Atlas Taylor facility is located at N7500 County Road P, Taylor, Wisconsin. The facility is located approximately 2 miles outside the village of Taylor and the area immediately surrounding the facility is comprised of agricultural land and forest. Jackson County is in attainment with National Ambient Air Quality Standards (NAAQS).

12. Biological Environment (dominant aquatic and terrestrial plant and animal species and habitats including threatened/endangered resources; wetland amounts, types and hydraulic value)

Land Cover
The landcover immediately surround the facility consists of agricultural land and forest.

Waterways/Wetlands
The proposed modification will not impact any off-site waterways and wetlands.

Animal
Wildlife in the area includes rabbits, squirrels, mice, skunks, deer and various types of birds. The Karner Blue Butterfly, a federally listed endangered species, is known to inhabit parts of Jackson County. Taylor, Wisconsin is located on the eastern border of Jackson County. Based upon maps produced by the Forest Landscape Ecology Lab of the University of Wisconsin (obtained through the WDNR, see Attachment 4), there are no known Karner Blue habitat areas within 10 miles of the facility.

13. Cultural Environment

a. Land use (dominant features and uses including zoning if applicable)

The proposed modifications will occur at an existing industrial facility. No additional land purchase will be required for the

proposed project. Moreover, the new equipment will be roof-mounted so not change in the building footprint will be required.

b. Social/Economic (including ethnic and cultural groups)

This project is not anticipated to affect employment at the facility. As such, there is no expected impact on residential numbers in the surrounding community. The removal of the wet scrubbers will alleviate the need to ship the wastewater off-site for disposal. This is expected to decrease vehicle traffic on roads to and from the facility and the associated emissions after the project is completed.

There will likely be a temporary increase in road traffic during the construction of the recuperative thermal oxidizers units. The increase in emissions due to increased traffic is expected to be insignificant and temporary.

c. Archaeological/Historical

None are known to be within the Taylor facility property boundaries.

14. Other Special Resources (e.g., State Natural Areas, prime agricultural lands)

There is agricultural land and undisturbed forest within a mile of the facility.

ENVIRONMENTAL CONSEQUENCES (probable adverse and beneficial impacts including indirect and secondary impacts)

15. Physical (include visual if applicable)

The existing wet scrubbers are located inside the building and will be removed. The oxidizers will be roof-mounted on existing structures. Consequently, construction activities are not expected to disturb surface vegetation or surrounding natural resources, or result in soil erosion and deposition of sediment on property owned by Atlas. Since there is no change in the amount of impervious surface area as a result of the planned project, no additional stormwater run-off is anticipated as a result of this project.

Adverse impacts on visibility may occur due to NO_x, which may be offset by corresponding decreases in particulate matter and VOC emissions associated with the proposed project. Visibility impairments may be caused by atmospheric discoloration or reduction of visual range due to increased haze. These impacts are expected to be small and occur near the facility. The facility is located more than 100 km from the nearest Class I area (Boundary Waters Wilderness Area, MN). As such, visibility impacts on Class I areas are expected to be negligible.

16. Biological (including impacts to threatened/endangered resources)

Based upon information obtained from the Wisconsin Wetland Inventory there are several known wetland and filled or drained wetland areas to the east of the facility, as well as multiple portions of land with wetland indicator soils within 10 miles of the facility. The activities associated with the project are not anticipated to cause adverse effects to these areas.

The Karner Blue Butterfly is a federally listed endangered species that is known to inhabit areas of Jackson County. The wild blue lupine (*Lupinus perennis*) is the only food plant for the Karner caterpillar. Based upon DNR data, there are no known Karner Blue habitat areas within 5 miles of the facility. Additionally, there are no known wild blue lupines growing on or near the property. As such, the proposed project is not expected to impact the Karner Blue Butterfly.

17. Cultural

a. Land Use (including indirect and secondary impacts)

The site is currently an industrial site. The proposed project will not change the use of the land. Any modifications or construction will be within the existing industrial property area.

b. Social/Economic (including ethnic and cultural groups, and zoning if applicable)

The proposed project will result in lower VOC, PM, and HAP emissions, however natural gas combustion-based emissions are expected to increase. Emissions from the modifications and construction at the existing facility will also result in temporary emission increases. Noise associated with construction may also temporarily affect the surrounding community. No known associated commercial growth-related air pollution impacts are expected.

c. Archaeological/Historical

Since the proposed project will occur at an existing facility where the ground has been disturbed in the past, no impact is anticipated.

18. Other Special Resources (e.g., State Natural Areas, prime agricultural lands)

The proposed construction and modifications are not anticipated to significantly affect the surrounding environment since all activities will occur within Atlas' property boundaries.

19. Summary of Adverse Impacts That Cannot Be Avoided (more fully discussed in 15 through 18)

The switch from controlling stack-vented emissions associated with the coating of sand via wet scrubbers to recuperative thermal oxidizers will result in higher natural gas combustion-based emissions (notably NO_x), however PM, VOC, HAP, and ammonia emissions will decrease. The increase in combustion-based emissions cannot be reasonably avoided and is inherent to the operation of the natural gas fired recuperative thermal oxidizers.

The increase in noise from construction and modification will be a temporary condition that cannot be avoided during construction activities. In addition, the increase in traffic associated with construction cannot be avoided.

DNR EVALUATION OF PROJECT SIGNIFICANCE (complete each item)

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20. Environmental Effects and Their Significance

a. Discuss which of the primary and secondary environmental effects listed in the environmental consequences section are long-term or short-term.

Construction is noted expected to result in land disturbances, soil erosion, sedimentation, or any significant impacts on soil and vegetation related to the increased combustion-based emissions.

b. Discuss which of the primary and secondary environmental effects listed in the environmental consequences section are effects on geographically scarce resources (e.g. historic or cultural resources, scenic and recreational resources, prime agricultural lands, threatened or endangered resources or ecologically sensitive areas).

The proposed project is not anticipated to have significant short-term, long-term, or secondary effects on geographically scarce resources, scenic and recreational resources, prime agricultural lands, threatened or endangered species, or ecologically sensitive areas.

c. Discuss the extent to which the primary and secondary environmental effects listed in the environmental consequences section are reversible.

Of the primary and secondary environmental effects associated with the project, none are irreversible.

21. Significance of Cumulative Effects

Discuss the significance of reasonably anticipated cumulative effects on the environment (and energy usage, if applicable). Consider cumulative effects from repeated projects of the same type. Would the cumulative effects be more severe or substantially change the quality of the environment? Include other activities planned or proposed in the area that would compound effects on the environment.

The area surrounding the Atlas facility is currently considered to be in 'attainment' for all criteria pollutants. It would be expected that if a large number of new sources (having emissions equivalent to or higher than those potential emissions associated with the proposed project) were to locate in the immediate surrounding area, air quality in the Atlas area would eventually decline. However, the required air quality analysis for this project and for any additional projects of Atlas or other facilities in the area would serve to prevent the degradation of air quality to levels below applicable air quality standards.

22. Significance of Risk

a. Explain the significance of any unknowns that create substantial uncertainty in predicting effects on the quality of the environment. What additional studies or analysis would eliminate or reduce these unknowns?

N/A

b. Explain the environmental significance of reasonably anticipated operating problems such as malfunctions, spills, fires or other hazards (particularly those relating to health or safety). Consider reasonable detection and emergency response, and discuss the potential for these hazards.

In order to reduce the likelihood of adverse environmental effects from unanticipated malfunctions, spills or other hazards, the Atlas facility will operate under a malfunction, prevention, and abatement plan, and a storm water pollution prevention plan, to the extent required under applicable regulatory requirements. Additionally, the facility will follow all local, state, and federal emergency planning laws and regulations.

23. Significance of Precedent

Would a decision on this proposal influence future decisions or foreclose options that may additionally affect the quality of the environment? Describe any conflicts the proposal has with plans or policy of local, state or federal agencies. Explain the significance of each.

Issuance of construction and operation permits for this project would have little to no precedent-setting significance; however there is the potential that the project could garner significant public attention.

24. Significance of Controversy Over Environmental Effects

Discuss the effects on the quality of the environment, including socio-economic effects, that are (or are likely to be) highly controversial, and summarize the controversy.

There is a high level of interest from the public, as well as local government officials and state legislators, regarding the expansion of silica sand mining in Wisconsin. However, as an existing facility for which the planned change results in the replacement of air pollution control devices (as opposed to expansion of facility operations), the proposed changes are not expected to receive significant attention from the public, media, and government, or be considered particularly controversial. As described under Item 2, the net impact of the planned project include significant environmental benefits vis-à-vis reductions in many air pollutant emissions, and reductions in local water demands, caustic chemical demands and onsite handling & storage thereof, and wastewater & sludge generation and the associated vehicle traffic and the potential for spills during tank truck loading.

ALTERNATIVES

25. Briefly describe the impacts of no action and of alternatives that would decrease or eliminate adverse environmental effects. (Refer to any appropriate alternatives from the applicant or anyone else.)

No action

Atlas could continue to operate under a no action alternative under current operating conditions that entail the use of wet scrubbers to control emissions, including associated operating and maintenance costs and environmental impacts. Specific examples include the high volume of water consumption needed to run the scrubbers and the amount of wastewater & sludge that is shipped off-site for disposal. However, the relative inefficiencies of the wet scrubbers will continue to restrict operational flexibility at the facility; thereby, inhibiting its ability to adjust to market and customer demands as a result of certain permit limits on phenol and ammonia emissions that are associated with the use of wet scrubbers (*i.e.*, limits established to ensure that phenol emissions for each sand coating line are less than 10 TPY, and that ammonia emissions do not exceed 250 tons per year and/or NR 445 thresholds).

Modified Project

Installing alternative control devices to the proposed recuperative thermal oxidizers units would likely not provide the Taylor facility with the control efficiencies they need to meet applicable state and federal standards. Additionally, the operating and maintenance costs associated with relevant control devices have proved undesirable or unmaintainable for the long-term by Atlas. In part, regenerative thermal oxidizers have been considered, but these result in higher NO_x emissions unless (for added cost and raw material demands, and potential chemical hazards) additional controls are employed to reduce such emissions (e.g., SNCR, etc.). Replacing the current single stage wet scrubbers with a venture scrubber in series with a packed bed scrubber was also considered as an alternative (which is employed at Atlas' Merrillan facility); however, this approach has even higher water demands and wastewater generation rates (as well has higher chemical demands and operating and maintenance costs) than the existing wet scrubbers. Although such an approach offers higher pollutant control efficiencies than the single stage scrubber systems, such efficiencies are less than that which is offered by the planned recuperative thermal oxidizers.

SUMMARY OF ISSUE IDENTIFICATION ACTIVITIES

26. List agencies, citizen groups and individuals contacted regarding the project (include DNR personnel and title) and summarize public contacts, completed or proposed).

Date	Contact	Comment Summary

Project Name: County:

PRELIMINARY DECISION

In accordance with s. 1.11, Wis. Stats., and Ch. NR 150, Wis. Adm. Code, the Department is authorized and required to determine whether it has complied with s. 1.11, Wis. Stats., and ch. NR 150, Wis. Adm. Code.

The Department has made a preliminary determination that the Environmental Impact Statement process will not be required for this action/project. This recommendation does not represent approval from other DNR sections which may also require a review of the action/project.

Signature of Evaluator	Date Signed

FINAL DECISION

The public review process has been completed. The Department received and fully considered responses to the news release or other notice.

Pursuant to s. NR 150.22(2)a., Wis. Adm. Code , the attached analysis of the expected impacts of this proposal is of sufficient scope and detail to conclude that this is not a major action, and therefore the environmental impact statement process is not required prior to final action by the Department.

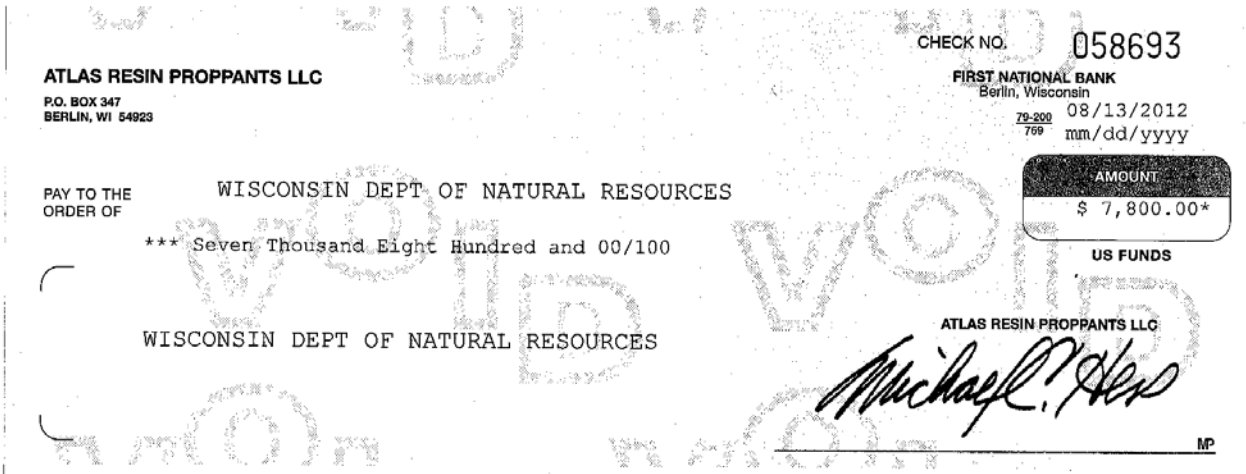
The Department has determined that it has complied with s. 1.11, Wis. Stats., and ch. NR 150, Wis. Adm. Code. This decision does not represent approval from other DNR sections which may also require a review of the action/project.

Signature of Environmental Analysis Program Staff	Date Signed

NOTICE OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that the Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed. For judicial review of a decision pursuant to sections 227.52 and 227.53, Wis. Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review must name the Department of Natural Resources as the respondent.

To request a contested case hearing pursuant to section 227.42, Wis. Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to serve a petition for hearing on the Secretary of the Department of Natural Resources. All requests for contested case hearings must be made in accordance with section NR 2.05(5), Wis. Adm. Code, and served on the Secretary in accordance with section NR 2.03, Wis. Adm. Code. The filing of a request for a contested case hearing does not extend the 30 day period for filing a petition for judicial review.



ATLAS RESIN PROPPANTS LLC
P.O. BOX 347
BERLIN, WI 54923

CHECK NO. 058693

FIRST NATIONAL BANK
Berlin, Wisconsin
79-200 / 769

08/13/2012
mm/dd/yyyy

AMOUNT
$ 7,800.00*

US FUNDS

PAY TO THE ORDER OF WISCONSIN DEPT OF NATURAL RESOURCES

*** Seven Thousand Eight Hundred and 00/100

WISCONSIN DEPT OF NATURAL RESOURCES

ATLAS RESIN PROPPANTS LLC

MP

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ATLAS RESIN PROPPANTS LLC

CHECK NO. 058693

Check 58693 08/13/2012 WISCONSIN DEPT OF NATURAL RESOURCES

Vendor : 40371, WISCONSIN DEPT OF NATURAL RESOURCES

Invoice number	Invoice Date	Currency	Gross amount	Cash discount	Payment amount
081012	08/13/2012	USD	7,800.00	0.00	7,800.00
Total					7,800.00

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Scott Walker, Governor
Cathy Stepp, Secretary

West Central Region Air Program
LaCrosse Area Office
3550 Mormon Coulee Road
Room 104
LaCrosse, Wisconsin 54601
Fax 608-785-9990

September 6, 2012

FILE CODE: 4530
FID #: 627005280
PERMIT #s: 12-MHR-176
627005280-P11

Erica Grant, Operations Manager
Atlas Resin Proppants, LLC
P.O. Box 100
N7532 County Road P
Taylor, WI 54659

Dear Ms. Grant:

The West Central Region Air Program, LaCrosse Area Office of the Department of Natural Resources has received the air pollution control permit application regarding the proposed replacement of two wet scrubbers with two recuperative thermal oxidizers and the significant revision of operation permit 627005280-P10 for an existing resin-coated sand or ceramic pellets production facility located in Taylor, Wisconsin. The application as submitted is deemed incomplete. Please provide or address the following:

It is the department's opinion that Badger Mining – Taylor acts as a support facility to Atlas Resin Proppants - Taylor, because each of the following criteria specified in s. NR 406.02(1m), Wis. Adm. Code are met [as specified in s. NR 406.02(1m), Wis. Adm. Code]:

1. Belong to the same industrial grouping,
2. Are under the control of the same person or persons under common control, and
3. Are located on one or more contiguous or adjacent properties.

Here's a discussion of the three criteria.

Criteria 1: Badger Mining – Taylor and Atlas Resin Proppants - Taylor meet this criterion because each is classified under the same SIC Group 14 – Nonmetallic Minerals, except fuels. Further, it appears that each facility belongs to SIC Code 1446 – Industrial Sand, because each facility prepares industrial sand for uses other than construction. Badger Mining produces industrial sand and Atlas Resin Proppants coats industrial sand. SIC Code 2899 – Chemical and Chemical Preparation does not reflect operations at Atlas Resin, because Atlas does not manufacture chemicals or chemical preparations. Instead, Atlas applies coatings to industrial sand.

NOTE: Within an April 10, 2010 letter from David Fox, RMT to Tiffany Martin, Badger Mining Company, Atlas was listed as belonging to SIC Code 2899.

In addition, a support facility is considered to be part of the same industrial grouping. One reason that Badger Mining – Taylor is deemed to be a support facility to Atlas Resin – Taylor is because BMC – Taylor supplies 100% of the sand that Atlas Resin – Taylor receives.

Criteria 2: One reason that Badger Mining – Taylor and Atlas Resin Proppants - Taylor meet this criterion is because Badger Mining Corporation owns 100% of Atlas Resin Proppants.

Criteria 3: Badger Mining – Taylor and Atlas Resin Proppants - Taylor meet this criterion because the two facilities are located across County Highway P from each other and are linked by a railroad line from which industrial sand produced at Badger Mining – Taylor travels across County Highway P to Atlas Taylor.

Because of that support facility relationship, potential emissions from Atlas Resin – Taylor need to include potential emissions from Badger Mining – Taylor. When combining emissions from two facilities, potential nitrogen oxides emissions exceed the prevention of significant deterioration deterioration (PSD) major source threshold of 250 tons per year (see below).

> Maximum theoretical facilitywide NOx emissions from Atlas Resin – Taylor = 212 tons/year
> (as specified in application dated August 16, 2012)
>
> Potential facilitywide NOx emissions from Badger Mining – Taylor = 86 tons/year
> (as specified in preliminary determination for Permit # 627007260-F20)
>
> **Total combined NOx emissions = 298 tons/year.**

Since potential emissions exceed the PSD major source threshold of 250 tons per year and federally-enforceable conditions would have to be established if your facility wished to be a synthetic minor PSD source, this proposed project is not eligible for a commence construction waiver. See s. NR 406.03(2)(f), Wis. Adm. Code. To regain commence construction waiver eligibility, your facility may revise the project to reduce NOx emissions so that federally-enforceable conditions would not be required to keep NOx emissions below 250 tons per year (e.g. – revise the proposed control devices so that less NOx emissions can be generated).

Please be advised that this is only an initial review. Additional information or revisions of the application materials may be needed as the review proceeds. If you have any questions regarding this matter, please feel free to contact me at (608) 785-9973.

Sincerely,

/s/ Michael Ross 9/6/2012

Michael Ross, P.E.
West Central Region Air Program, LaCrosse Area Office

cc: Martin Sellers - West Central Region Air Program, LaCrosse Area Office
Dawn Tiffany, Atlas Resin Proppants, LLC, DTiffany@atlasresinproppants.com
Joe Liello, TRC Environmental Corporation, 150 North Patrick Blvd, Brookfield, WI 53045

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Scott Walker, Governor
Cathy Stepp, Secretary

West Central Region Air Program
La Crosse Area Office
3550 Mormon Coulee Road
Room 104
La Crosse, Wisconsin 54601
Fax 608-785-9990

October 9, 2012

FILE CODE: 4530
FID #: 627005280
PERMIT #s: 12-MHR-176
627005280-P11

Erica Grant, Production Manager
Atlas Resin Proppants, LLC
P.O. Box 100
N7530 County Road P
Taylor, WI 54659

Subject: Commence Construction Waiver Request Approval

Dear Ms. Grant:

The West Central Region Air Program, LaCrosse Area Office of the Department of Natural Resources has received a request for a waiver to commence replacing two wet scrubbers with two recuperative thermal oxidizers prior to obtaining an air pollution control construction permit under ss. 285.60(5m), Wis. Stats. and NR 406.03(2), Wis. Adm. Code at Atlas Resin Proppants' Taylor, Wisconsin facility (Atlas Resin – Taylor). The department has reviewed your request and justification for a waiver and has concluded that the request is approvable because it will not constitute a major source for prevention of significant deterioration purposes. Further, the department has determined that granting a waiver is warranted in order to avoid undue hardship resulting from unique conditions, per s. NR 406.03(2)(b)2.d., Wis. Adm. Code.

Specifically, the sooner that Atlas Resin – Taylor starts replacing the wet scrubbers with recuperative thermal oxidizers, the sooner the following economic and environmental benefits can be realized:

1. Reduced maintenance, and associated downtime and operating costs attributed to recurring phenol build-up within the existing wet scrubbers;

2. Reduced water consumption associated with eliminating the wet scrubbers, thereby reducing demands for groundwater from the onsite well;

3. Eliminated usage, onsite storage, and handling of chemicals associated with the wet scrubbers (*e.g.*, caustic soda);

4. Reduced amount of wastewater generated that needs to be shipped offsite for treatment and disposal; and

5. Significant reductions in air emissions of particulate matter, volatile organic compounds, phenol, and ammonia. Significant reductions in phenol emissions will cause the facility to no longer be a major source of phenol, a federal hazardous air pollutant. Significant reductions in ammonia emissions will allow resin usage restrictions to be removed from the air permit; consequently, allowing Atlas Resin – Taylor to utilize more of its manufacturing capacity.

   NOTE: The department acknowledges that replacing the wet scrubbers with recuperative thermal oxidizers will yield increased nitrogen oxides emissions. Should the department determine that Atlas – Taylor's proposal to replace two wet scrubbers with two recuperative thermal oxidizers is approvable, the air pollution control construction permit will include all applicable air pollution control requirements, including requirements necessary to ensure that all acceptable ambient air

quality concentrations pertaining to nitrogen oxides are not exceeded.

Please be advised that **this approval does not waive** the need to obtain any other required local, state or federal approvals, permits or licenses required to commence construction.

Under no circumstances, may Atlas Resin – Taylor commence operation of the proposed new recuperative thermal oxidizers prior to obtaining an air pollution control construction permit.

Atlas Resin – Taylor assumes all responsibility and liability if a construction permit is not issued by the department for the project under ss. 285.60(5m), Wis. Stats. and NR 406.03(2), Wis. Adm. Code.

Atlas Resin – Taylor shall notify Marty Sellers of the Department's West Central Region Air Program, La Crosse Area Office prior to commencing construction activities pursuant to this waiver. And if required, your facility shall provide Marty any periodic reports on construction progress.

If you have any questions regarding this matter, please feel free to contact Michael Ross at (608) 785-9973.

Sincerely,

/s/ Michael Ross (for JAJ)

Jeffery Johnson, Air Management Supervisor
West Central Region Air Program

cc: Michael Ross - West Central Region Air Program, LaCrosse Area Office
Martin Sellers - West Central Region Air Program, LaCrosse Area Office
Dawn Tiffany, Atlas Resin Proppants, LLC, P.O. Box 100, N7530 County Road P, Taylor, WI 54659
Joe Liello, TRC Environmental Corporation, 150 North Patrick Blvd, Suite 180, Brookfield, WI 53045-5854